Chapter - I

Introduction:

The first sport psychologist is said to have been Norman Triplett, a North American man from Asia, born in 1861. Triplett’s first finding as a sport psychologist was that cyclists cycle faster in pairs or a group, rather than riding solo.

Carl Diem, a German, founded the world’s first sport psychology laboratory in 1920. Five years later, A.Z. Puni opened a lab at the Institute of Physical Culture in Leningrad. Also in 1925, Coleman Griffith opened the first sport psychology lab in North America at the University of Illinois. He began his research in factors that affect sport performance in 1918, and in 1923, offered the first ever sport psychology course.

The International Society of Sport Psychology (ISSP) was formed by Dr. Ferruccio Antonelli of Italy in 1965. In 1966, a group of sport psychologists met in Chicago to form the North American Society of Sport Psychology and Physical Activity (NASPSPA).

In the 1970's, sport psychology became a part of the curriculum on university campuses. These courses which were generally found in the kinesiology programs taught students how to develop positive attitudes in athletes using cognitive and behavioral modification techniques. In the 1980's, sport psychology became more research focused. Sport psychologists looked into performance enhancement, the psychological impact of exercise and over training as well as stress management.

Today, sport and exercise psychologists have begun to research and provide information in the ways that psychological well-being and vigorous physical activity are related. This idea of psychophysiology, monitoring brain activity during exercise has aided in this research. Also,
sport psychologists are beginning to consider exercise to be a therapeutic addition to healthy mental adjustment.

Just recently have sport psychologists begun to be recognized for the valuable contributions they make in assisting athletes and their coaches in improving performance during competitive situations, as well as understanding how physical exercise may contribute to the psychological well-being of non-athletes. Many can benefit from sport psychologists: athletes who are trying to improve their performance, injured athletes who are looking for motivation, individuals looking to overcome the pressure of competition, and young children involved in youth sports as well as their parents. Special focus is geared towards psychological assessment of athletes. Assessment can be both, focused on selection of athletes and the team set up of rosters as well as on professional guidance and counseling of single athletes.

**Sport psychology terminology**

A few terms used in sport psychology:

- **Cohesion** – Group cohesion refers to the extent to which a team or group shares a sense of shared task or social bond
- **Imagery** – Refers to 'imagined' sensations, for example visual imagery is known as 'visualization'
- **Attention Focus** – Being able to block everything out, e.g., a crowd.
- **Motivation**– Recent research implies that sports-related achievement motivation is composed of several traits that together form a general orientation of a person towards achievement in sports. This research refers to The Achievement Motivation Inventory (AMI) (Schuler, Thornton, Frintrup & Mueller-Hanson, 2003) which is a broad-spectrum assessment of achievement-motivation in business, and has been used to develop the Sports Performance Indicator.
- **Internal Monologue** - Maintaining positive thoughts during competition by keeping a running conversation going in one's mind
- **Criticism** - A tenet of motivational theory that is necessary to improve performance. The proper delivery of that criticism is imperative, as criticism can either better performance
or drastically worsen it. There are three types of criticism: Destructive, Self, and Constructive. The best method of delivering constructive criticism is the "sandwich" approach; here, one first offers a compliment, then offers and critical feedback and useful directions to improve in that particular area, and then end with another compliment.

**Sport**

A sport is an organized, competitive, and skillful physical activity requiring commitment and fair play, in which a winner can be defined by objective means. It is governed by a set of rules or customs. In a sport the key factors are the physical capabilities and skills of the competitor when determining the outcome (winning or losing). The physical activity involves the movement of people, animals and/or a variety of objects such as balls and machines or equipment. In contrast, games such as card games and board games, though these could be called mind sports and some are recognized as Olympic sports, require primarily mental skills and only mental physical involvement. Non-competitive activities, for example as jogging or playing catch, are usually classified as forms of recreation.

Physical events such as scoring goals or crossing a line first often define the result of a sport. However, the degree of skill and performance in some sports such as diving, dressage and figure skating is judged according to well-defined criteria. This is in contrast with other judged activities such as beauty pageants and body building, where skill does not have to be shown and the criteria are not as well defined.

Records are kept and updated for most sports at the highest levels, while failures and accomplishments are widely announced in sport news. Sports are most often played just for fun or for the simple fact that people need exercise to stay in good physical condition. However, professional sport is a major source of entertainment.

While practices may vary, sports participants are expected to display good sportsmanship, and observe standards of conduct such as being respectful of opponents and officials, and congratulating the winner when losing.
Etymology and meaning

"Sport" comes from the Old French desport meaning "leisure." American English uses the term "sports" to refer to this general type of recreational activity, whereas other regional dialects use the singular "sport". The Persian word for "sport" is based on the root bord, meaning "winning". The Chinese term for "sport," tiyu connotes "physical training". The Modern Greek term for sport is Αθλητισμός (athlitismos), directly cognate with the English terms "athlete" and "athleticism."

The oldest definition of sport in English (1300) is of anything humans find amusing or entertaining. Other meanings include gambling and events staged for the purpose of gambling; hunting; and games and diversions, including ones that require exercise. Roget's defines the noun sport as an "Activity engaged in for relaxation and amusement" with synonyms including diversion and recreation. An example of a more sharply defined meaning is "an athletic activity where one competitor or a team of competitors plays against another competitor or group of competitors [with] a conclusive method of scoring...not determined by a judge."

History

There are artifacts and structures that suggest that the Chinese engaged in sporting activities as early as 4000 BC. Gymnastics appears to have been a popular sport in China's ancient past. Monuments to the Pharaohs indicate that a number of sports, including swimming and fishing, were well-developed and regulated several thousands of years ago in ancient Egypt. Other Egyptian sports included javelin throwing, high jump, and wrestling. Ancient Persian sports such as the traditional Iranian martial art of Zourkhaneh had a close connection to the warfare skills. Among other sports that originate in ancient Persia are polo and jousting.

A wide range of sports were already established by the time of Ancient Greece and the military culture and the development of sports in Greece influenced one another considerably. Sports became such a prominent part of their culture that the Greeks created the Olympic Games, which in ancient times were held every four years in a small village in the Peloponnesus called Olympia.
Sports have been increasingly organized and regulated from the time of the Ancient Olympics up to the present century. Industrialization has brought increased leisure time to the citizens of developed and developing countries, leading to more time for citizens to attend and follow spectator sports, greater participation in athletic activities, and increased accessibility. These trends continued with the advent of mass media and global communication. Professionalism became prevalent, further adding to the increase in sport's popularity, as sports fans began following the exploits of professional athletes through radio, television, and the internet—all while enjoying the exercise and competition associated with amateur participation in sports.

In the new millennium, new sports have been going further from the physical aspect to the mental or psychological aspect of competing. Electronic sports organizations are becoming more and more popular.

**Sportsmanship**

Sportsmanship is an attitude that strives for fair play, courtesy toward teammates and opponents, ethical behaviour and integrity, and grace in victory or defeat.

Sportsmanship expresses an aspiration or ethos that the activity will be enjoyed for its own sake. The well-known sentiment by sports journalist Grantl and Rice, that it's “not that you won or lost but how you played the game,” and the Modern Olympic creed expressed by its founder Pierre de Coubertin: "The most important thing . . . is not winning but taking part" are typical expressions of this sentiment.

Violence in sports involves crossing the line between fair competition and intentional aggressive violence. Athletes, coaches, fans, and parents sometimes unleash violent behaviour on people or property, in misguided shows of loyalty, dominance, anger, or celebration. Rioting or hooliganism are common and ongoing problems at national and international sporting contests.

**Professional sports**

The entertainment aspect of sports, together with the spread of mass media and increased leisure time, has led to professionalism in sports. This has resulted in some conflict, where the paycheck
can be seen as more important than recreational aspects, or where the sports are changed simply to make them more profitable and popular, thereby losing certain valued traditions.

The entertainment aspect also means that sportsmen and women are often elevated to celebrity status in media and popular culture.

**Politics**

At times, sports and politics can have a large amount of influence on each other.

When apartheid was the official policy in South Africa, many sports people, particularly in rugby union, adopted the conscientious approach that they should not appear in competitive sports there. Some feel this was an effective contribution to the eventual demolition of the policy of apartheid, others feel that it may have prolonged and reinforced its worst effects.

The 1936 Summer Olympics held in Berlin was an illustration, perhaps best recognised in retrospect, where an ideology was developing which used the event to strengthen its spread through propaganda.

In the history of Ireland, Gaelic sports were connected with cultural nationalism. Until the mid 20th century a person could have been banned from playing Gaelic football, hurling, or other sports administered by the Gaelic Athletic Association (GAA) if she/he played or supported soccer, or other games seen to be of British origin. Until recently the GAA continued to ban the playing of soccer and rugby union at Gaelic venues. This ban is still enforced, but has been modified to allow football and rugby be played in Croke Park while Lansdowne Road is being redeveloped. Until recently, under Rule 21, the GAA also banned members of the British security forces and members of the RUC from playing Gaelic games, but the advent of the Good Friday Agreement in 1998 led to the eventual removal of the ban.

Nationalism is often evident in the pursuit of sports, or in its reporting: people compete in national teams, or commentators and audiences can adopt a partisan view. On occasion, such tensions can lead to violent confrontation among players or spectators within and beyond the
sporting venue (see Football War). These trends are seen by many as contrary to the fundamental ethos of sports being carried on for its own sake and for the enjoyment of its participants.

**Physical art**

Sports have many affinities with art. For example, figure skating, artistic gymnastics, dance sport, and Tai chi can be considered artistic spectacles. Similarly, there are other activities that have elements of sport and art in their execution, such as bodybuilding, free running, martial arts, performance art, Yoga, bossaball, dressage, and culinary arts. Perhaps the best example is bullfighting, which in Spain is reported in the arts pages of newspapers.

All sports involve physical and mental activities that are pursued for more than simply utilitarian reasons. For instance, running, when done as a sport, occurs for reasons beyond simply moving from one place to another. Value is gained from this activity when it is conducted simply for its own sake. This is similar to the concept of aesthetic value, which is seeing something over and above the strictly functional value coming from an object's normal use. For instance, an aesthetically pleasing car is one which doesn't just get from A to B, but which impresses with its grace, poise, and charisma. In the same way, a sporting performance such as jumping doesn't just impress as being an effective way to avoid obstacles. It impresses because of the ability, skill, and style that is demonstrated in its performance.

Art and sports were clearly linked at the time of Ancient Greece, when gymnastics and calisthenics invoked admiration and aesthetic appreciation for the physical build, prowess and 'arete' displayed by participants. The modern term 'art' as skill, is related to this ancient Greek term 'arete'. The closeness of art and sport in these times was revealed by the nature of the Olympic Games, which were celebrations of both sporting and artistic achievements, poetry, sculpture and architecture.

**Technology**

Technology has an important role in sports, whether applied to an athlete's health, the athlete's technique, or equipment's characteristics.
Equipment - As sports have grown more competitive, the need for better equipment has arisen. Golf clubs, (American) football helmets, tennis racquets, baseball bats, soccer balls, hockey skates, and other equipment have all seen considerable changes when new technologies have been applied.

Health - Ranging from nutrition to the treatment of injuries, as the knowledge of the human body has deepened over time, an athlete's potential has been increased. Athletes are now able to play to an older age, recover more quickly from injuries, and train more effectively than previous generations of athletes.

Instruction - Advancing technology created new opportunities for research into sports. It is now possible to analyse aspects of sports that were previously out of the reach of comprehension. Being able to use motion capture to capture an athlete's movement, or advanced computer simulations to model physical scenarios has greatly increased an athlete's ability to understand what they are doing and how they can improve themselves.

**Terminology**

In British English, sporting activities are commonly denoted by the mass noun "sport". In American English, "sports" is more used. In all English dialects, "sports" is the term used for more than one specific sport. For example, "football and swimming are my favorite sports", would sound natural to all English speakers, whereas "I enjoy sport" would sound less natural than "I enjoy sports" to North Americans.

The term "sport" is sometimes extended to encompass all competitive activities, regardless of the level of physical activity. Both games of skill and motor sport exhibit many of the characteristics of physical sports, such as skill, sportsmanship, and at the highest levels, even professional sponsorship associated with physical sports. Air sports, billiards, bridge, chess, motorcycle racing, and power boating are all recognized as sports by the International Olympic Committee with their world governing bodies represented in the Association of the IOC Recognised International Sports Federations.
**Spectator sport**

As well as being a form of recreation for the participants, much sport is played in front of an audience. Most professional sport is played in a 'theatre' of some kind; be it a stadium, arena, golf course, race track, or the open road, with provision for the (often paying) public.

**Australian Rules football**

Large television or radio audiences are also commonly attracted, with rival broadcasters bidding large amounts of money for the 'rights' to show certain fixtures. The football World Cup attracts a global television audience of hundreds of millions; the 2006 Final alone attracted an estimated worldwide audience of well over 700 million. The Cricket World Cup is another sporting event which attracts a global audience. The 2007 Cricket World Cup attracted about 2.3 Billion viewers all over the world. In the United States, the championship game of the NFL, the Super Bowl, has become one of the most watched television broadcasts of the year. Super Bowl Sunday is a de facto national holiday in America; the viewership being so great that in 2007 advertising space was reported as being sold at $2.6m for a 30 second slot.

**Nationalism and sport**

Nationalism and sport are often intertwined, as sports provide a venue for symbolic competition between nations; sports competition often reflects national conflict, and in fact has often been a tool of diplomacy. The involvement of political goals in sport is seen by some as contrary to the fundamental ethos of sport being carried on for its own sake, for the enjoyment of its participants, but this involvement has been true throughout the history of sport.

**Sports diplomacy**

Most sports are contested between national teams, which encourages the use of sporting events for nationalist purposes, whether intentionally or not. The signaling of national solidarity through sport is one of the primary forms of banal nationalism.
Several sporting events are a matter of national pride; The Ashes is a matter of national pride between England and Australia. Also in cricket an India vs Pakistan match puts both countries on a virtual standstill as it is all about national pride during those matches.

The Olympic Games are the premier stage for nationalist competition, and its history reflects the history of political conflict since its inception at the end of the 19th century. The 1936 Summer Olympics held in Berlin was an illustration, maybe best acknowledged in hindsight, where an ideology was developing which used the event to strengthen its spread through propaganda. The boycott by the United States and politically aligned nations of the 1980 Summer Olympics and the Soviet Union of the 1984 Summer Olympics were part of the Cold War conflict.

When apartheid was the official policy in South Africa, many sportspeople adopted the conscientious approach that they should not appear in competitive sports there. Some feel this was an effective contribution to the eventual demolition of the policy of apartheid, others feel that it may have prolonged and reinforced its worst effects. Many African nations boycotted the 1976 Summer Olympics in Montreal, as a result of then New Zealand Prime Minister Robert Muldoon allowing the All Blacks to tour South Africa. The issue would later come to a head during the 1981 Springbok Tour.

George Orwell's essay "The Sporting Spirit" examines the effect nationalism plays on sport, where Orwell argues that various sporting events trigger violence between groups for the very reason of competition.

**Nationalist sports**

In the history of Ireland, Gaelic sports were clearly carried on with nationalist overtones: for example, for most of the last century a person could have been banned from playing Gaelic football, hurling, or other sport, if the person was seen to have played soccer, cricket, rugby or any other game which was perceived to be of British origin. Furthermore, the Old Firm derby in Glasgow featuring Celtic, historically linked to the city's Catholic community, and Rangers, similarly linked to the city's Protestant community, have also historically seen trends along religio-political lines.
The nationalistic Italian fascists also created Volata as their own home-grown alternative to soccer and rugby. It was intended to be a replacement for the popular games perceived to be of British origin that would be of a more local character, tracing its heritage back to the earlier Italian games of Harpastum and Calcio Fiorentino. However, unlike its Gaelic equivalents, Volata was short-lived and is no longer played.

The policy of Spanish football team Athletic Bilbao of picking only Basque players is strongly linked to Basque nationalism.

**Olympic Games**

The Olympic Games are a major international event featuring summer and winter sports, in which thousands of athletes participate in a variety of competitions. The Games are currently held every two years in even-numbered years, with Summer and Winter Olympic Games alternating, although they occur every four years within their respective seasonal games. Originally, the ancient Olympic Games were held in Olympia, Greece, from the 8th century BC to the 5th century AD. Baron Pierre de Coubertin founded the International Olympic Committee (IOC) in 1894. The IOC has since become the governing body of the Olympic Movement, whose structure and actions are defined by the Olympic Charter.

The evolution of the Olympic Movement during the 20th and 21st centuries has resulting in the IOC adapting the Games to the world's changing social circumstances. Some of these adjustments included the creation of the Winter Games for ice and snow sports, the Paralympics Games for athletes with physical disabilities, and the Youth Olympic Games for teenage athletes. The IOC also had to accommodate the Games to the varying economical, political, and technological realities of the 20th century. As a result, the Olympics shifted away from pure amateurism, as envisioned by Coubertin, to allow participation of professional athletes. The growing importance of the mass media created the issue of corporate sponsorship and commercialization of the Games.

The Olympic Movement currently comprises international sports federations (IFs), National Olympic Committees (NOCs), and organizing committees for each specific Olympic Games. As the decision-making body, the IOC is responsible for choosing the host city for each Olympic
Games. The host city is responsible for organizing and funding a celebration of the Games consistent with the Olympic Charter. The Olympic program, consisting of the sports to be contested at each Olympic Games, is also determined by the IOC. The celebration of the Games encompasses many rituals and symbols, such as the Olympic flag and torch, as well as the opening and closing ceremonies. There are over 13,000 athletes that compete at the Summer and Winter Olympics in 33 different sports and nearly 400 events. The first, second, and third place finishers in each event receive gold, silver or bronze Olympic medals, respectively.

The Games have grown in scale to the point that nearly every nation is represented. Such growth has created numerous challenges, including boycotts, doping, bribery of officials, and terrorism. Every two years, the Olympics and its media exposure provide unknown athletes with the chance to attain national, and in particular cases, international fame. The Games also constitute a major opportunity for the host city and country to promote and showcase themselves to the world.

Sport psychology is the scientific study of people and their behaviors in sport. The role of a sport psychologist is to recognize how participation in sport exercise and physical activity enhances a person’s development. The first sport psychologist is said to have been a North American man from Asia, born in 1861. Triplett’s first finding as a sport psychologist was that cyclists cycle faster in pairs or a group, rather than riding solo a German, founded the world’s first sport psychology laboratory in 1920. Five years later, opened a lab at the Institute of Physical Culture in Leningrad. Also in 1925, opened the first sport psychology lab in North America at the University of Illinois. He began his research in factors that affect sport performance in 1918, and in 1923, offered the first ever sport psychology course.

Beginning, in the 1970’s, sport psychology became a part of the curriculum on university campuses. These courses which were generally found in the kinesiology programs taught students how to develop positive attitudes in athletes using sport psychology and drugs. In the 1980’s, sport psychology became more research focused. Sport psychologists looked into performance enhancement, the psychological impact of exercise and over training as well as stress management.
Today, sport and exercise psychologists have begun to research and provide information in the ways that psychological well-being and vigorous physical activity are related. This idea of psychophysiology, monitoring brain activity during exercise has aided in this research. Also, sport psychologists are beginning to consider exercise to be a therapeutic addition to healthy mental adjustment.

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**Sports Psychology - Makes Sportsmen Perform Better**

Modern day sports are very demanding. It requires for the sportsmen and athletes alike to perform to the very best of their abilities and beyond. So it becomes all the more important that the athletes do get the maximum help that they can in order to compete and win in a highly competitive environment. While it is important that the athlete should have the necessary skills required to excel in a particular sporting event, the sports team that he or she is a part of also forms an equally important contributing factor for the athlete’s success. The team includes supporters, trainers and sports doctors among others, who are all doing their bit in ensuring that the athlete performs in competitions at the height of the mental, physical and emotional abilities that he or she is capable of. In all of this, one area of psychology has an important part to play, and that is sports psychology.

Sports psychology is concerned with preparing the athlete or teams to be able to handle the high emotional stress levels that come with participating in sports competitions. Psychologists and sports trainers can work in tandem to enhance the performance levels of the athlete. The coach can
give appropriate information about the particular athlete to the psychologist, who will then be able to derive the psychological and behavioral patterns of the athlete before an event. With the help of this mental picture as well as the characteristic mental attitude of the athlete, the coach will be able to set up the most effective training schedule that will bring out the best in all of the athlete’s capabilities. Thus, sports trainers can use psychology and help their charges better and get the best performance out of them.

In order to better equip the athlete or teams for sports competitions, the coaches will have to have an idea about sports psychology. Event though it is not necessary for them to be experts in psychology, it does help their wards a lot if coaches are able to gauge the mental condition of the athletes before and during a competition.

One of the best examples of the benefits of sports psychology can be witnessed in and during several sports competitions that are held over long periods and test the endurance levels of the different sportsmen. In such events, you will be able to see that certain of the athletes will be handling themselves through the competition with much lesser effort than others. These athletes and sportsmen will be turning up their peak performances with high levels of endurance and focus notwithstanding the length of the sporting competition. Now it becomes clear that these athletes would have had a coach with an idea about sports psychology and the advantages that it brings along to the performing athletes. On the other hand, you will also see other athletes who appear to be struggling to maintain focus and complete goals; these will be the ones who might not have had the benefit of sports psychology.

Like in the other fields of psychology, sports psychology also deals with the complex human mind. Only it is more oriented towards extending the advantage of understanding the athletes’ minds and giving them every chance of outperforming themselves and others. So a sports psychologist forms a necessary part of every sports team.

Sports psychology: Mental toughness: do you have what it takes to maintain focus, motivation and self-belief when the going gets hard?

There are certain moments during competition that appear to carry great psychological significance, when the momentum starts to shift in one direction or another. These situations
require athletes to remain completely focused and calm in the face of difficult circumstances. Tennis players talk of the ‘big’ points during a tight match, such as a fleeting chance to break serve; for an athlete, it could be the final triple-jump in the competition after seriously underperforming; for a footballer, it could be how you react to a perceived bad refereeing decision or to going behind in a match your team are expected to win. Think about times when things have not gone quite to plan and how you reacted. The journey towards peak performance is rarely a perfectly smooth road and we learn from our mistakes – or should do. Do setbacks shake your self-belief and lower your motivation or act as a catalyst for even greater effort?

Even great athletes and teams suffer setbacks. Olympic athlete Steve Backley is a prime example. In his book The Winning Mind, Backley cites his psychological strengths and, at times, his weaknesses as major determinants of whether he performed near to or below his own strict targets in competition. He talks of the transition from young up-and-coming javelin thrower to major international competitor when, after experiencing success so often as a junior, he found himself under-prepared for the mental hurdles and barriers created by higher-level competition. Backley says psychological strategies were the key to helping him to deal with this competitive stress.

Most top athletes and coaches believe that psychological factors play as crucial a role as physical attributes and learned skills in the make-up of champions. When physical skills are evenly matched – as they tend to be in competitive sport – the competitor with greater control over his or her mind will usually emerge as the victor. Mental strength is not going to compensate for lack of skill, but in close contests it can make the difference between winning and losing.

A key question for sport and exercise psychologists is whether champions have simply inherited the dominant psychological traits necessary for success or whether mental toughness can be acquired through training and experience. Recent research has attempted to explore the concept of mental toughness in sport more thoroughly, and it appears that, while some people are naturally more tough-minded than others, people can be ‘toughened-up’ with the correct approach to training.
Ancient Olympics

The Ancient Olympic Games was a series of competitions held between representatives of several city-states and kingdoms from Ancient Greece, which featured mainly athletic but also combat and chariot racing events. During the Olympic games all struggles against the participating city-states were postponed until the games were finished. The origin of these Olympics is shrouded in mystery and legend. One of the most popular myths identifies Heracles and his father Zeus as the progenitors of the Games. According to legend, it was Heracles who first called the Games "Olympic" and established the custom of holding them every four years. A legend persists that after Heracles completed his twelve labors, he built the Olympic stadium as an honor to Zeus. Following its completion, he walked in a straight line for 200 steps and called this distance a "stadion" (Greek: στάδιον, Latin: stadium, "stage"), which later became a unit of distance. Another myth associates the first Games with the ancient Greek concept of Olympic truce (ἐκεχειρία, ekecheiria). The most widely accepted date for the inception of the Ancient Olympics is 776 BC; this is based on inscriptions, found at Olympia, of the winners of a footrace held every four years starting in 776 BC. The Ancient Games featured running events, a pentathlon (consisting of a jumping event, discus and javelin throws, a foot race and wrestling), boxing, wrestling, and equestrian events. Tradition has it that Coroebus, a cook from the city of Elis, was the first Olympic champion.

The Olympics were of fundamental religious importance, featuring sporting events alongside ritual sacrifices honoring both Zeus (whose famous statue by Phidias stood in his temple at Olympia) and Pelops, divine hero and mythical king of Olympia. Pelops was famous for his chariot race with King Oenomaus of Pisatis. The winners of the events were admired and immortalized in poems and statues. The Games were held every four years, and this period, known as an Olympiad, was used by Greeks as one of their units of time measurement. The Games were part of a cycle known as the Panhellenic Games, which included the Pythian Games, the Nemean Games, and the Isthmian Games.

The Olympic Games reached their zenith in the 6th and 5th centuries BC, but then gradually declined in importance as the Romans gained power and influence in Greece. There is no consensus on when the Games officially ended, the most common-held date is 393 AD, when the
emperor Theodosius I declared that all pagan cults and practices be eliminated. Another date cited is 426 AD, when his successor Theodosius II ordered the destruction of all Greek temples. After the demise of the Olympics, they were not held again until the late 19th century.

Modern Games

Forerunners

The first significant attempt to emulate the ancient Olympic Games was the *L'Olympiade de la République*, a national Olympic festival held annually from 1796 to 1798 in Revolutionary France. The competition included several disciplines from the ancient Greek Olympics. The 1796 Games also marked the introduction of the metric system into sport.

In 1850 an Olympian Class, to improve the fitness of locals, was started by Dr William Penny Brookes at Much Wenlock, in Shropshire, England. In 1859, Dr Brookes renamed[19] the Olympian Class to Wenlock Olympian Games and this annual games continues to this day. The Wenlock Olympian Society was founded by Dr Brookes on November 15, 1860. 28

Revival

Greek interest in reviving the Olympic Games began with the Greek War of Independence from the Ottoman Empire in 1821. It was first proposed by poet and newspaper editor Panagiotis Soutsos in his poem "Dialogue of the Dead", published in 1833. Evangelis Zappas, a wealthy Greek philanthropist, first wrote to King Otto of Greece, in 1856, offering to fund a permanent revival of the Olympic Games Zappas sponsored the first Olympic Games in 1859, which was held in an Athens city square. Athletes participated from Greece and the Ottoman Empire. Zappas funded the restoration of the ancient Panathenaic stadium so that it could host all future Olympic Games.

Dr Brookes adopted events from the program of the Olympics held in Athens in 1859 in to future Wenlock Olympian Games. In 1866, a national Olympic Games in Great Britain was organized by Dr. William Penny Brookes at London's Crystal Palace.
The Panathinaiko Stadium hosted Olympics in 1870 and 1875. Thirty thousand spectators crowded in to and around the stadium in 1870 - bigger than almost any crowd at Coubertin's IOC Olympics from 1900 to 1920.

In 1890, after attending the Olympian Games of the Wenlock Olympian Society Baron Pierre de Coubertin was inspired to found the International Olympic Committee. Coubertin built on the ideas and work of Brookes and Zappas with the aim of establishing internationally rotating Olympic Games that would occur every four years. He presented these ideas during the first Olympic Congress of the newly created International Olympic Committee (IOC). This meeting was held from June 16 to June 23, 1894, at the Sorbonne University in Paris. On the last day of the Congress, it was decided that the first Olympic Games, to come under the auspices of the IOC, would take place two years later in Athens. The IOC elected the Greek writer Demetrius Vikelas as its first president.

1896 Games

The first Games held under the auspices of the IOC was hosted in the Panathenaic stadium in Athens in 1896. These Games brought 14 nations and 241 athletes who competed in 43 events. Zappas and his cousin Konstantinos Zappas had left the Greek government a trust to fund future Olympic Games. This trust was used to help finance the 1896 Games. George Averoff contributed generously for the refurbishment of the stadium in preparation for the Games. The Greek government also provided funding, which was expected to be recouped through the future sale of tickets to the Games and from the sale of the first Olympic commemorative stamp set.

The Greek officials and public were enthusiastic about the experience of hosting these Games. This feeling was shared by many of the athletes, who even demanded that Athens be the host of the Olympic Games on a permanent basis. The IOC did not approve this request. The committee planned that the modern Olympics would rotate internationally. As such they decided to hold the second Games in Paris.
Changes and adaptations

Following the success of the 1896 Games, the Olympics entered a period of stagnation that threatened their survival. The Olympic Games held at the Paris Exposition in 1900 and the World's Fair at St. Louis in 1904 were side-shows. The Games at Paris did not have a stadium, however this was the first time women took part in the games. The St. Louis Games hosted 650 athletes, but 580 were from the United States. The homogeneous nature of these celebrations was a low point for the Olympic Movement. The Games rebounded when the 1906 Intercalated Games (so-called because they were the second Games held within the third Olympiad) were held in Athens. These Games are not officially recognized by the IOC and no Intercalated Games have been held since. These Games, which were hosted at the Panathenaic stadium in Athens, attracted a broad international field of participants, and generated great public interest. This marked the beginning of a rise in both the popularity and the size of the Olympics.

Winter Games

The Winter Olympics were created to feature snow and ice sports that were logistically impossible to hold during the Summer Games. Figure skating (in 1908 and 1920) and ice hockey (in 1920) were featured as Olympic events at the Summer Olympics. The IOC desired to expand this list of sports to encompass other winter activities. At the 1921 Olympic Congress, in Lausanne, it was decided to hold a winter version of the Olympic Games. A winter sports week (it was actually 11 days) was held in 1924 in Chamonix, France; this event became the first Winter Olympic Games. The IOC mandated that the Winter Games be celebrated every four years on the same year as their summer counterpart. This tradition was upheld until the 1992 Games in Albertville, France; after that, beginning with the 1994 Games, the Winter Olympics were held on the third year of each Olympiad.

Paralympics

In 1948, Sir Ludwig Guttmann, determined to promote the rehabilitation of soldiers after World War II, organized a multi-sport event between several hospitals to coincide with the 1948 London Olympics. Guttmann's event, known then as the Stoke Mandeville Games, became an annual sports festival. Over the next twelve years, Guttmann and others continued their efforts to
use sports as an avenue to healing. For the 1960 Olympic Games, in Rome, Guttman brought 400 athletes to compete in the "Parallel Olympics", which became known as the first Paralympics. Since then, the Paralympics have been held in every Olympic year. As of the 1988 Summer Olympics in Seoul, South Korea, the host city for the Olympics has also played host to the Paralympics.

**Youth Games**

Starting in 2010, the Olympic Games will be complemented by Youth Games, where athletes between the ages of 14 and 18 will compete. The Youth Olympic Games were conceived by IOC president Jacques Rogge in 2001 and approved during the 119th Congress of the IOC. The first Summer Youth Games will be in Singapore in 2010, while the inaugural Winter Games will be hosted in Innsbruck, Austria, two years later. These Games will be shorter than the senior Games; the summer version will last twelve days, while the winter version will last nine days. The IOC will allow 3,500 athletes and 875 officials to participate at the Summer Youth Games, and 970 athletes and 580 officials at the Winter Youth Games. The sports to be contested will coincide with those scheduled for the traditional senior Games, however there will be a reduced number of disciplines and events.

**Recent games**

From 241 participants representing 14 nations in 1896, the Games have grown to about 10,500 competitors from 204 countries at the 2008 Summer Olympics. The scope and scale of the Winter Olympics is smaller. For example, Turin hosted 2,508 athletes from 80 countries competing in 84 events, during the 2006 Winter Olympics. During the Games most athletes and officials are housed in the Olympic village. This village is intended to be a self-contained home for all the Olympic participants. It is furnished with cafeterias, health clinics, and locations for religious expression.

The IOC allows nations to compete that do not meet the strict requirements for political sovereignty that other international organizations demand. As a result, colonies and dependencies are permitted to set up their own National Olympic Committees. Examples of this
include territories such as Puerto Rico, Bermuda, Taiwan, and Hong Kong, all of which compete as separate nations despite being legally a part of another country.

**International Olympic Committee**

The Olympic Movement encompasses a large number of national and international sporting organizations and federations, recognized media partners, as well as athletes, officials, judges, and every other person and institution that agrees to abide by the rules of the Olympic Charter. As the umbrella organization of the Olympic Movement, the International Olympic Committee (IOC) is responsible for selecting the host city, overseeing the planning of the Olympic Games, updating and approving the sports program, and negotiating sponsorship and broadcasting rights.

The Olympic Movement is made of three major elements:

- **International Federations (IFs)** are the governing bodies that supervise a sport at an international level. For example, the International Federation of Association Football (FIFA) is the IF for football (soccer), and the Fédération Internationale de Volleyball (FIVB) is the international governing body for volleyball. There are currently 35 IFs in the Olympic Movement, representing each of the Olympic sports.

- **National Olympic Committees (NOCs)** represent and regulate the Olympic Movement within each country. For example, the United States Olympic Committee (USOC) is the NOC of the United States. There are currently 205 NOCs recognized by the IOC.

- **Organizing Committees for the Olympic Games (OCOGs)** constitute the temporary committees responsible for the organization of a specific celebration of the Olympics. OCOGs are dissolved after each Games, once the final report is delivered to the IOC.

French and English are the official languages of the Olympic Movement. The other language used at each Olympic Games is the language of the host country. Every proclamation (such as the announcement of each country during the parade of nations in the opening ceremony) is spoken in these three languages, or the main two depending on whether the host country is an English or French speaking country.
Criticism

The IOC has often been criticized for being an intractable organization, with several members on the committee for life. The leadership of IOC presidents Avery Brundage and Juan Antonio Samaranch was especially controversial. Brundage was president for over 20 years, and during his tenure he protected the Olympics from untoward political involvement. He was accused of both racism, for his handling of the apartheid issue with the South African delegation, and anti-Semitism. Under the Samaranch presidency, the office was accused of both nepotism and corruption. Samaranch's ties with the Franco regime in Spain were also a source of criticism.

In 1998, it was uncovered that several IOC members had taken bribes from members of the Salt Lake City bid committee for the hosting of the 2002 Winter Olympics, to ensure their votes were cast in favor of the American bid. The IOC pursued an investigation which led to the resignation of four members and expulsion of six others. The scandal set off further reforms that would change the way host cities are selected, to avoid similar cases in the future.

A BBC documentary entitled *Panorama: Buying the Games*, aired in August 2004, investigated the taking of bribes in the bidding process for the 2012 Summer Olympics. The documentary claimed it was possible to bribe IOC members into voting for a particular candidate city. After being narrowly defeated in their bid for the 2012 Summer Games, Parisian Mayor Bertrand Delanoë specifically accused the British Prime Minister Tony Blair and the London Bid Committee (headed by former Olympic champion Sebastian Coe) of breaking the bid rules. He cited French President Jacques Chirac as a witness; Chirac gave guarded interviews regarding his involvement. The allegation was never fully explored. The Turin bid for the 2006 Winter Olympics was also shrouded in controversy. A prominent IOC member, Marc Hodler, strongly connected with the rival bid of Sion, Switzerland, alleged bribery of IOC officials by members of the Turin Organizing Committee. These accusations led to a wide-ranging investigation. The allegations also served to sour many IOC members against Sion's bid and potentially helped Turin to capture the host city nomination.
Commercialization

The IOC originally resisted funding by corporate sponsors. It was not until the retirement of IOC president Avery Brundage, in 1972, that the IOC began to explore the potential of the television medium and the lucrative advertising markets available to them. Under the leadership of Juan Antonio Samaranch the Games began to shift toward international sponsors who sought to link their products to the Olympic brand.

Budget

During the first half of the 20th century the IOC was run on a small budget. As president of the IOC from 1952 to 1972, Avery Brundage rejected all attempts to link the Olympics with commercial interest. Brundage believed the lobby of corporate interests would unduly impact the IOC's decision-making. Brundage's resistance to this revenue stream meant the IOC left organizing committees to negotiate their own sponsorship contracts and use the Olympic symbols. When Brundage retired the IOC had US$2 million in assets; eight years later the IOC coffers had swelled to US$45 million. This was primarily due to a shift in ideology toward expansion of the Games through corporate sponsorship and the sale of television rights. When Juan Antonio Samaranch was elected IOC president in 1980 his desire was to make the IOC financially independent.

The 1984 Summer Olympics became a watershed moment in Olympic history. The Los Angeles-based organizing committee, led by Peter Ueberroth, was able to generate a surplus of US$225 million, which was an unprecedented amount at that time. The organizing committee had been able to create such a surplus in part by selling exclusive sponsorship rights to select companies. The IOC sought to gain control of these sponsorship rights. Samaranch helped to establish The Olympic Program (TOP) in 1985, in order to create an Olympic brand. Membership in TOP was, and is, very exclusive and expensive. Fees cost US$50 million for a four year membership. Members of TOP received exclusive global advertising rights for their product category, and use of the Olympic symbol, the interlocking rings, in their publications and advertisements.
Effect of television

The 1936 Summer Olympics in Berlin were the first Games to be broadcast on television, though only to local audiences. The 1956 Winter Olympics were the first internationally televised Olympic Games, and the following Winter Games had their broadcasting rights sold for the first time to specialized television broadcasting networks—CBS paid US$394,000 for the American rights, and the European Broadcasting Union (EBU) allocated US$660,000. In the following decades the Olympics became one of the ideological fronts of the Cold War. Superpowers jockeyed for political supremacy, and the IOC wanted to take advantage of this heightened interest via the broadcast medium. The sale of broadcast rights enabled the IOC to increase the exposure of the Olympic Games, thereby generating more interest, which in turn created more appeal to advertisers who purchased advertising time on television. This cycle allowed the IOC to charge ever-increasing fees for those rights. For example, CBS paid US$375 million for the rights of the 1998 Nagano Games, while NBC spent US$3.5 billion for the broadcast rights of all the Olympic Games from 2000 to 2008.

Viewership increased exponentially from the 1960s until the end of the century. This began as a result of the beginning of the usage of satellite in 1964 and the introduction of color television in 1968. Worldwide audience estimates for the 1968 Mexico City Games was 600 million, whereas at the Los Angeles Games of 1984, the audience numbers had increased to 900 million; that number swelled to 3.5 billion by the 1992 Summer Olympics in Barcelona. However, at the 2000 Summer Games in Sydney, NBC drew the lowest ratings for any Summer or Winter Olympics since 1968. This was attributed to two factors: one was the increased competition from cable channels, the second was the internet, which was able to display results and video in real time. Television companies were still relying on tape-delayed content, which was becoming outdated in the information era. A drop in ratings meant that television studios had to give away free advertising time. With such high costs charged to broadcast the Games, the added pressure of the internet, and increased competition from cable, the television lobby demanded concessions from the IOC to boost ratings. The IOC responded by making a number of changes to the Olympic program. At the Summer Games, the gymnastics competition was expanded from seven to nine nights, and a Champions Gala was added to draw greater interest. The IOC also expanded the swimming and diving programs, both popular sports with a broad base of television viewers.
Finally, the American television lobby was able to dictate when certain events were held so that they could be broadcast live during prime time in the United States. The result of these efforts was mixed: the ratings for the 2006 Winter Games, held in Torino, Italy, were significantly lower than those for the 2002 Games, while there was a sharp increase in viewership for the 2008 Summer Olympics, staged in Beijing.

**Controversy**

The sale of the Olympic brand has been controversial. The argument is that the Games have become indistinguishable from any other commercialized sporting spectacle. Specific criticism was levelled at the IOC for market saturation during the 1996 Atlanta and 2000 Sydney Games. The cities were awash in corporations and merchants attempting to sell Olympic-related wares. The IOC indicated that they would address this to prevent spectacles of over-marketing at future Games. Another criticism is that the Games are funded by host cities and national governments; the IOC incurs none of the cost, yet controls all the rights and profits from the Olympic symbols. The IOC also takes a percentage of all sponsorship and broadcast income. Host cities continue to compete ardently for the right to host the Games, even though there is no certainty that they will earn back their investments.

**Symbols**

The Olympic Movement uses symbols to represent the ideals embodied in the Olympic Charter. The Olympic symbol, better known as the Olympic rings, consists of five intertwined rings and represents the unity of the five inhabited continents (America, Africa, Asia, Australasia, Europe). The colored version of the rings—blue, yellow, black, green, and red—over a white field forms the Olympic flag. These colors were chosen because every nation had at least one of them on its national flag. The flag was adopted in 1914 but flown for the first time only at the 1920 Summer Olympics in Antwerp, Belgium. It has since been hoisted during each celebration of the Games.

The Olympic motto is *Citius, Altius, Fortius*, a Latin expression meaning "Faster, Higher, Stronger". Coubertin's ideals are further expressed in the Olympic creed:
The most important thing in the Olympic Games is not to win but to take part, just as the most important thing in life is not the triumph but the struggle. The essential thing is not to have conquered but to have fought well.

Months before each Games, the Olympic flame is lit in Olympia in a ceremony that reflects ancient Greek rituals. A female performer, acting as a priestess, ignites a torch by placing it inside a parabolic mirror which focuses the sun's rays; she then lights the torch of the first relay bearer, thus initiating the Olympic torch relay that will carry the flame to the host city's Olympic stadium, where it plays an important role in the opening ceremony. Though the flame has been an Olympic symbol since 1928, the torch relay was introduced at the 1936 Summer Games, as part of the German government's attempt to promote its National Socialist ideology.

The Olympic mascot, an animal or human figure representing the cultural heritage of the host country, was introduced in 1968. It has played an important part on the Games identity promotion since the 1980 Summer Olympics, when the Russian bear cub Misha reached international stardom. The mascots of the most recent Summer Olympics, in Beijing, were the Fuwa, five creatures that represent the five fengshui elements important in Chinese culture.

**Ceremonies**

**Opening**

As mandated by the Olympic Charter, various elements frame the opening ceremony of the Olympic Games. Most of these rituals were established at the 1920 Summer Olympics in Antwerp. The ceremony typically starts with the hoisting of the host country's flag and a performance of its national anthem. The host nation then presents artistic displays of music, singing, dance, and theater representative of its culture. The artistic presentations have grown in scale and complexity as successive hosts attempt to provide a ceremony that outlasts its predecessor's in terms of memorability. The opening ceremony of the Beijing Games reportedly cost $100 million, with much of the cost incurred in the artistic segment.

After the artistic portion of the ceremony, the athletes parade into the stadium grouped by nation. Greece is traditionally the first nation to enter in order to honor the origins of the Olympics.
Nations then enter the stadium alphabetically according to the host country's chosen language, with the host country's athletes being the last to enter. During the 2004 Summer Olympics, which was hosted in Athens, Greece, the Greek flag entered the stadium first, while the Greek delegation entered last. Speeches are given, formally opening the Games. Finally, the Olympic torch is brought into the stadium and passed on until it reaches the final torch carrier—often a well-known and successful Olympic athlete from the host nation—who lights the Olympic flame in the stadium's cauldron.

Closing

The closing ceremony of the Olympic Games takes place after all sporting events have concluded. Flag-bearers from each participating country enter the stadium, followed by the athletes who enter together, without any national distinction. Three national flags are hoisted while the corresponding national anthems are played: the flag of Greece, to honor the birthplace of the Olympic Games; the flag of the current host country, and the flag of the country hosting the next Summer or Winter Olympic Games. The president of the organizing committee and the IOC president make their closing speeches, the Games are officially closed, and the Olympic flame is extinguished. In what is known as the Antwerp Ceremony, the mayor of the city that organized the Games transfers a special Olympic flag to the president of the IOC, who then passes it on to the mayor of the city hosting the next Olympic Games. After these compulsory elements, the next host nation briefly introduces itself with artistic displays of dance and theater representative of its culture.

Medal presentation

A medal ceremony is held after each Olympic event is concluded. The winner, second and third-place competitors or teams stand on top of a three-tiered rostrum to be awarded their respective medals. After the medals are given out by an IOC member, the national flags of the three medalists are raised while the national anthem of the gold medalist's country plays. Volunteering citizens of the host country also act as hosts during the medal ceremonies, as they aid the officials who present the medals and act as flag-bearers. For every Olympic event, the respective medal ceremony is held, at most, one day after the event's final. For the men's marathon, the
competition is usually held early in the morning on the last day of Olympic competition and its medal ceremony is then held in the evening during the closing ceremony.

**Physical Education**

Since ancient times, people in India believed that the human body is indeed an instrument of dharma (shareeramevādyā hi khalu dharmanādhanam). Hence the body is to be properly nourished, and maintained. In medieval Karnataka people gave as much importance to physical exercise as to literary education. The principle of “a sound mind in a sound body” was not only accepted but also faithfully practiced. The system of yoga was the first step in spiritual training. Yoga comprises full-fledged toning of the body and mind. It includes the use of various body postures to control breathing and muscle movements, and to help gain control over human passions as well. It was the general belief that this balancing of the body and mind led to intellectual strength.

Village schools were usually situated in the temple premises or in the courtyard of mathas, where children played after daytime lessons. Besides this, every village had one or two playgrounds, where sporting events and games were held during the annual fair of the village deity. These involved wrestling, boxing, mallakhambha (pillar acrobatics), the shooting of arrows, and demonstrations of strength such as weight lifting. Bigger grounds were reserved for ram-fights, buffalo fights, fencing and duelling. Various ball games, and the indigenous sports of kho-kho and kabaddi were common. Most children's sports in medieval India ensured body-development. The economy and variety of indigenous games were greatly admired by visiting foreign travelers.

The game of ālinerike involved riding on one another; boys were lifted on shoulders in pairs, and the raised youngsters tried to knock each other down to the sand below. Haruguppe was a native form of hop-step-jump, wherein boys had to jump from one sand heap to another (arranged at equal distances), and try to be the fastest to reach the goal. It is interesting to note that young women played this game as well. >Dānd (also Sāmu) involves stretching the body while lying flat on one's stomach, and raising it slowly on the strength of one's arms while simultaneously controlling the breathing. It was a difficult exercise, but the whole body received
the toning it required. Some youngsters performed dānds in the hundreds. Chinikolu (also called gillidāndu) consisted of hitting a wooden ball with a wooden stick. Hitting one another with balls of cloth, hide and seek, and the game of pillars (kambada gadane) were popular among children. Kambada gadane resembles the game of musical chairs: players clutched available pillars in temples or large mansions as soon as the song ended or a cue was given. Kabaddi was formerly known as gudugu. Kuntahalipe was a one-legged game. Many of these sports are mentioned by the poet Kumara Vyasa in his classic, while describing the childhood games of the mythological Kauravas and Pandavas that had come down to his times. Ball games were popular with boys and girls alike.

Board games of cowries and pebbles were common among girls. Fugadi (holding hands and whirling around) and kuntāta, the one-legged version of 'tag', were other games played by girls.

A garadimane or gymnasium was a must in every village, to which youngsters thronged every morning. There they played with lōdu, dumbbells, clubs, metal balls, discs and javelins (see picture no. 44). Akhādās (wrestling houses) were well equipped, and received state-patronage. From Chalukyan times (c.10th century) to the reign of the Wodeyars of Mysore (20th century), wrestling received special royal attention, besides being a very popular pastime among the laity till the date.

**Wrestling**

Manasollasa mentions special coaching provided to wrestlers. To warm up, the would-be-wrestlers had to do jog three miles early morning. This was followed by dands and sit-ups. Weight lifting was also undertaken (see picture no. 42) by the wrestlers in order to strengthen the body. After resting for a while, wrestlers descended into the wrestling pit filled with finely sieved sand. They saluted each other in traditional style and began the joust when a signal was given. Various grips (pēchu) were practiced and had Kannada names. Youngsters flocked to these bouts to cheer and to mimic the gestures of grown-ups (see picture no. 75). The wrestler's body was well massaged before the bout began, and dust was applied to wrestlers' hands in order to prevent them from slipping over the opponent's oiled body. Bhavishnu or future-wrestlers
were fed on a special diet of black gram, meat, curds, flour mixed with milk, and clarified butter. They were specially guarded and prevented from spending time in the company of women. Special officers (mallādhyakhsha) kept a constant watch over mallas or wrestlers, who were divided into three categories: jyeshthaka, antarjyeshthaka, and govala, somewhat along the lines of modern-day heavy, middle and bantamweight wrestlers. The king personally selected wrestlers for bouts, ensuring contests among equals, and inspected the oath-taking and saluting ceremonies. Monetary allowances were given to wrestlers and they were permitted to wrestle up to the age of thirty. In smaller towns, wrestlers were arranged into two parties, before the bouts were held. Winners were paraded through the streets. It was the dream of winners to receive a royal invitation to wrestling bouts held in Vijayanagar during the mahānāvami festival. These festivities lasted nearly a month, according to Domingo Paes. Some female wrestlers were also known. The wrestling motif was popular among sculptors of the period.

There appears to have been two types in wrestling, as observed by Paes. One emphasized the game of strength while the second was violent and resembled modern boxing. Nunez had seen that in some instances wrestlers struck and wounded each other with circlets and with points, which they were allowed to conceal in their hands. We have sculptural representations of both types of these martial sports.

Archery and other Martial Arts

Garadis or village gymnasiuums were the training ground for future soldiers, as these were equipped with lāthis, spears, clubs, maces, and shields. Prince Kumara Rama received martial training in such a garadi.

Archery occupied an important place in the physical training of youngsters. Visual concentration and the coordination of hands, eyes, and feet were basic essentials in military training. Contests such as the matsyavēdha involved shooting an arrow into a revolving ball or a fish placed overhead, while looking at its reflection in the water below. “Drawing” the sketch of a date-tree with the help of rapidly-shot arrows was another feat. Shooting arrows and throwing rocks from Doddabetta to Chikkabetta, two hillocks in Shravanabelagola, was popular in the 11th and 12th
centuries and considered as acts of valor, as indicated by local inscriptions. Fights with a buffalo, a bull and an elephant were considered dangerous, but were highly applauded.

Dueling or *anka* was a common sport. Duels were fought with fists like in boxing, and also with weapons such as swords, daggers and knives. There was strict state control over dueling. These were fought as a result of rivalries arising over competition for women, over land and property disputes, for the exhibition of bravery, or in revenge and retribution for a crime committed. The strongest of *ankas* mentioned in the Manasollasa involved a swaggering desperado, who rode a buffalo and carried a torch in broad daylight, and threw a *birudanka* or a challenge to duel. The king was advised to discourage such combats and allow them only in exceptional cases.

Gladiatorial games were known in medieval Karnataka. Races between elephants and men were one such sport. A proclamation was issued by beating a drum (*dindima*) that old men, pregnant women, children, and the crippled were not to move out in public thoroughfares, due to grave danger from excited and inebriated race-elephants. Drugs were administered to make the elephants agitated. Runners were invited to participate in the race with infuriated elephants. Hardened criminals were also employed in these sports.

The race took place in a specially constructed arena. The audience was well-protected with the help of fortifications. The arena measured 400 cubits in length and 240 cubits in breadth and was divided into three parts including the elephant-zone (*dvipabhumi*), the king's zone (*nripabhumi*) and the runner's zone (*parikārabhumi*). The runner who could maintain his place in front of the elephant in all three parts of the arena was considered to have won the race. But if he went off the track, or ran zigzag, he was considered to have been defeated. The furious elephant was likely to trample and kill the *parikāra* or runner. Horse riders usually stood by to be to control the elephant and save the runner.

**Polo Games**

We now turn to the history of organized sports played in specially constructed stadia, which resemble modern ones. Ball sports on horseback are believed to have been introduced in India through central Asia during the Mughal period. However, a description of *vāji vāhyalivinoda*
(amusement of the ballgame) in the Manasollasa prove that indigenous sports resembling golf and horseback-polo were common even earlier, during Rashtrakuta and Chalukya times.

A Shravanabelagola inscription of 982 C.E. describes the excellence of king Indra IV in the science of the ballgame (kandukāgama)\(^7\). By this time, various ballgames including those played on horseback were so popular, that the science of the ballgame came to be developed. By reconstructing and interpreting meager details in the old Kannada inscription, the sport can be compared to golf of modern times, but was played on horseback. The arena was circular, and the game was played between individuals. The player on horseback hit the ball with a stick, and after hitting it around the circular arena, he would send it inside, probably towards a hole in the center of the field. This completed one round. Whoever could complete more rounds at a stretch was presumably the winner. It is said of Indra Raja that he would not rest satisfied until he made eight or ten rounds at a stretch.

In the polo sport of Chalukyan times (c.12th century) the field was four hundred hands square and the game was played between two teams consisting of eight members each. The ball (kanduka) and bat (geddikā) were made of wood and covered with red leather. The attire of the players included a tight coat and a belt. Players initially stood near the goals. Putting the horse into trot, one player moved the ball towards the goal of the opposing team, followed by the other members. The members of the opposite team would try to intercept the ball and attempt to move it in the opposite direction. The ball thus rolled from one end of the field to the other. Instead of one goalpost as in the modern game, there were two, one behind the other, and the ball had to pass through both\(^8\). The popularity of the sport of polo in Chalukyan times indicates the level of perfection attained in the art of riding.

*Hayavāhali* or *Ashvavāhali*, mentioned in Kannada classics, were practiced by princes and nobles. This referred to a popular ballgame on horseback. The history of polo or games on horse as described in this section takes the history of this sport in India at least five centuries further back than suggested by Prof. A.L. Basham who places its origin in Mughal times.
**Hunting and other sports**

Hunting was another important pastime indulged in by the royalty and the commoners alike. Mastery attained by youngsters in wielding various weapons such as the bow and arrow, spears, clubs and the *chitbil* (catapult) were put to the test during hunting expeditions. Indiscriminate killing of animals was avoided and expeditions were organized only when wild animals overbred, resulting in a scarcity of food for all animals in the forest.

An eco-balance was thus maintained and in this regard the expertise of forest dwellers, who were well acquainted with the terrain and the movement of animals, was utilized. A huge party of shooters, dogs and decoy animals such as the cheetah, deer and hawks was organized. Tigers, lions, boars, bears, wild buffaloes, deer, *sāmbar*, and a number of birds were killed or young ones (cubs) were caught alive in nets. Women also participated in such expeditions. Hunting scenes figure in contemporary sculptures of those times. Heroes who fell while fighting wild animals were gratefully remembered in hero-stones.

The hunting sport for women was generally less strenuous, although we often find the huntress-motifs in artwork. Back at home, *kōlāta*(game of sticks) was very popular and involved many feats such as the touching of the hair knot with the foot, performing tricks while simultaneously keeping the music and the beat in mind. Feats with sticks were common. Women acrobats were well known. A hero-stone from the 17th century refers to the tragic death of Yellakka, who while performing a feat on the pole, fell down and died on the spot.

Physical exercises undertaken by the Vijayanagara king Krishnadevaraya included body massage, wrestling, weight lifting and horse riding. These were undertaken daily, as documented by Domingo Paes. Krishnadevaraya's portrait in bronze at Tirupati shows the suppleness of his body maintained through regular exercise.

Father Du Jarric, who visited a gymnasium at Chandragiri in the 17th century, has left an interesting account of nobles who exercised through boxing, jumping, fencing and wrestling. He observed that these exercises were undertaken almost daily before dinner in order to be fit and healthy; "*thus men as old as seventy years look only thirty*". Perhaps such daily exercises were not common in contemporary Europe. Pietro della Valle who visited Ikkeri in 1623 C.E. has left
a vivid description of kōlāta by women. He has also stated that among Indians it is the custom for everyone to manage and use one sort of arms wherein he "accustomed himself."

**Physical education**

Physical education (often abbreviated Phys. Ed. or P.E.) or gymnastics (gym or gym class) is a course taken during primary and secondary education that encourages psychomotor learning in a play or movement exploration setting.

**Trends**

Physical Education trends have developed recently to incorporate a greater variety of activities. Introducing students to lifetime activities like bowling, walking/hiking, or Frisbee at an early age can help students develop good activity habits that will carry over into adulthood. Some teachers have begun to incorporate stress-reduction techniques such as yoga and deep-breathing. Teaching non-traditional sports to students may also provide the necessary motivation for students to increase their activity, and can help students learn about different cultures. For example, while teaching a unit about Lacrosse (in say Arizona), students can also learn a little bit about the Native American cultures of the Northeast and Eastern Canada, where Lacrosse originated. Teaching non-traditional (or non-native) sports provides a great opportunity to integrate academic concepts from other subjects as well (social studies from the example above), which is required of every P.E. teacher these days.

There are also many different models that have been created as of late that change the face of P.E. One example of this is the Health Club Model. Teaching with this model is very different from the "Organized Recess" of 20 or 30 years ago. Spun off the boom in the health club industry, a P.E. class provides many of the same "classes" that are found at a health club. Monday a student could be doing kickboxing, the next day is yoga, Wednesday the student is doing DOTA. This type of program provides a great variety of activity for students, a lot a high intensity exercise, and helps introduce these activities for use later in life. The Sports Education model is another example of a new model were the class is run like a sports league, with students taking the role of coaches, scorers, referees, and reporters as well as players. Using this model,
students practice management skills, mathematics skills, and writing skill all while learning sports skills and being active.

Another trend is the incorporation of Health and Nutrition to the physical education curriculum. The Child Nutrition and WIC Re-authorization Act of 2004 required that all school districts with a federally funded school meal program develop wellness policies that address nutrition and physical activity. While teaching students sports and movement skills, P.E. teachers are now incorporating short health and nutrition lessons into the curriculum. This is more prevalent at the elementary school level, where students do not have a specific Health class.

Today many states require Physical Education teachers to be certified to teach Health also. Many colleges and Universities offer both Physical Education and Health as one certification. This push towards Health education, is beginning in the intermediate level, including lessons on bullying, self esteem and stress and anger management.

In the United States, the physical education curriculum is designed to allow school pupils a full range of modern opportunities, dozens of sports and hundreds of carefully reviewed drills and exercises, including exposure to the education with the use of pedometer, GPS, and heart rate monitors, as well as state-of-the-art exercise machines in the upper grades. Some martial arts classes, like wrestling in the United States, and Pencak Silat in France, Indonesia and Malaysia, are taught to teach children self-defense and to feel good about themselves. The physical education curriculum is designed to allow students to experience at least a minimum exposure to the following categories of activities: aquatics, conditioning activities, gymnastics, individual/dual sports, team sports, rhythms, and dance. Students are encouraged to continue to explore those activities in which they have a primary interest by effectively managing their community resources.

In these areas, a planned sequence of learning experiences is designed to support a progression of student development. This allows kids through 6th grade to be introduced to sports, fitness, and teamwork in order to be better prepared for the middle and high school age. In 1975, the United States House of Representatives voted to require school physical education classes include both genders. Some high school and some middle school PE classes are single-sex. Requiring
individuals to participate in physical education activities, such as dodge ball, flag football, and other competitive sports remains a controversial subject because of the social impact these have on young children. It is, however, important to note that many school budgets have seen cutbacks and in some cases physical education programs have been cut - leaving educators and students to address these needs in other ways.

Worldwide

In Singapore, pupils from primary school through junior colleges are required to have 2 hours of PE every school week, except during examination seasons. Pupils are able to play games like football, badminton, 'captain's ball' and basketball during most sessions. Unorthodox sports such as tchoukball, fencing and skateboarding are occasionally played. In more prestigious secondary schools and in junior colleges, sports such as golf, tennis, shooting, squash are played. A compulsory fitness exam, NAPFA, is conducted in every school once every year to assess the physical fitness of the pupils. Pupils are given a series of fitness tests (Pull-ups/Inclined pull-ups for girls, standing broad jump, sit-ups, sit-and-reach and 1.2 km for secondary/2.4 km for junior colleges run). Students are graded by gold, silver, bronze and fail. NAPFA for Year 2 males in junior colleges serves as an indicator for an additional 2 months in the country's compulsory national service if they attain bronze or fail.

In Malaysia, pupils from primary schools to secondary schools are expected to do 2 periods or 1 hour of PE throughout the year except a week before examination. In most secondary schools, games like badminton, sepak takraw, football, basketball and tennis are available. Pupils are allowed to bring their own sports equipment to the school with the authorization of the teacher. In most secondary school, physical exams are rarely done, schools records on pupil's height, weight and how many push-up they can do.

In Scotland, pupils are expected to do two periods of PE in first year, one in second year and two in third and fourth year. In fifth and sixth year, PE is voluntary.

In the Philippines, some schools have integrated martial arts training into their Physical Education curriculum.
In England, pupils are expected to do two hours of PE a week in Year 7, 8 and 9 and at least 1 in year 10 and 11.

In Wales, pupils are expected to do only one hour of PE per fortnight.

In Nepal, physical education is poor and poorly organized because the educational system has only been recently established and is still adjusting to recent changes and updates. Nepal has not gone very far in the sector of education because the educational history of Nepal is very short. Before 1951, Nepal was under a monarchy. The monarchy did not wish to provide education to the citizens as it did not want them to be educated and therefore politically aware. Institution of democracy did not result in a modern educational system; what education there was little better. After 10 years of democracy the country again plunged into an autocratic monarchy. In 1990 democracy was restored and the education sector started to flourish. Since then, Physical Education became part of the school curriculum. At the primary level (1-5), some minor and local games are now taught, like hide and seek and some athletic based local events. In lower secondary level (6-8), the students are taught general concepts on major games like football, volleyball, basketball, Kho-Kho and Kabaddi. They also learn some athletics like 100m race, 100*4m relay race and some other minor and lead up games. In class Nine and ten it is an optional subject where they specialize in some games like volleyball, basketball, handball, cricket, Kho Kho Kabaddi, Badminton, table tennis and some athletics are also taught. In college it is taught in the education stream. Even though it is included in school curriculum, Nepal is not able to produce any worthwhile products of games and sports for reasons ranging from poverty to decentralized government.

Adapted Physical Education

Adapted Physical Education (APE) is a sub-discipline of physical education. It is an individualized program created for students with disabilities in order to ensure safe and successful physical education opportunities. Physical education involves physical fitness, motor fitness, fundamental motor skills and patterns, aquatics skills, dance skills, individual, group games, and sports (including lifetime sports). Adapted Physical Education is a direct service, not a related service.
Laws

Created in 2001, this act puts significant federal support behind the improvement of reading and mathematics scores and compromises other critical curricular areas, including physical education, health, history, art, computer science, and music (Auxter, Pyfer, Zittel, Roth, 2010). Additionally, schools and teachers are held to higher standards in the areas of accountability, assessment, and transparency. These higher standards are achieved by: 1. Annual Testing 2. Monitoring Academic Progress 3. Filing District Report Cards 4. Hiring Highly Qualified Teachers 5. Creating a Measurable 'Reading First' Program 6. Funding Poorer Schools

Americans with Disabilities Act (P.L. 101-336)

Americans with Disabilities Act (ADA) was created in 1990 to prohibit the discrimination of individual's with disabilities in the public and private sectors. The ADA outlaws discrimination against a person with a disability in the five titles: employment, public services, transportation, public accommodations, and telecommunications. To be protected by the ADA, the individual must have a disability or be associated with an individual with a disability. In 2008, effective January 1, 2009, congress passed a law to restore ADA back to its original intent of defining a disability, looking at the effects of the disability in at least one major life activity. This change helped companies and employers follow the rules of ADA. The ADA requires accessibility in federal and private sectors, including physical education facilities. For example, weight rooms should have accommodate wheelchair users, gym lockers should have key locks instead of combination locks for those who need it, and gyms with stairs should also have ramps.

Individuals with Disabilities Education Act (IDEA)

Created in 1990 (and reauthorized in 1997 and 2004), IDEA was the reauthorization of PL 94-142 and continued the emphasis upon FAPE (Free and Appropriate Public Education), IEP (Individual Education Program), LRE (Least Restrictive Environment), and Physical Education as a direct, educational service. With this reauthorization, person-first terminology was instituted, and emphasis was placed on the education of students with disabilities within the general curriculum and parent involvement in educational programming. Under Federal Law,
students must have one of thirteen named disabilities in order to qualify for this special programming.

**Education for All Handicapped Children Act (P.L. 94-142)**

Created in 1975, this act mandated: (a) a free appropriate public education (FAPE) for all children and adults with disabilities between the ages of 3 and 21 years; (b) an Individualized Education Program; (c) an education in the Least Restrictive Environment; and (d) Physical Education as a direct, educational service.

To ensure that every child with a disability receives an appropriate education, the Education for All Handicapped Children Act of 1975 mandated that an Individual Education Program (IEP) be developed for each student with a disability that requires specialized instruction. The IEP should be the cornerstone of the student's education and should be the living, working document that teachers and parents use as the basis for the instructional process.

**The Rehabilitation Act (P.L. 93-112, Section 504)**

Created in 1973, this act mandated that individuals with disabilities cannot be excluded from any program or activity receiving federal funds solely on the basis of the disability. Students with disabilities who do not qualify for services under IDEA, yet require reasonable accommodations to benefit from their education must have a written 504 plan. A 504 plan is a written document that states modifications and accommodations that the student will be needing to be given the same program as those individuals who do not have a disability. The student's disability and corresponding need for reasonable accommodation are identified and documented in the plan. All school staff involved in the provision of accommodations should be contacted by the 504 coordinator and made aware of their duties and responsibilities.

**Individual Education Program or IEP**

An Individualized Educational Plan (IEP) can be defined as a plan for each student, ages 3 to 21, who qualifies for adapted physical education based on an evaluation. All IEPs are outcome-oriented giving assurance that the student will benefit from special education and have real
opportunities, full participation, independent living, and economic self-efficiency. IEPs are revised once a year by an IEP team. IEPs are developed by the IEP team and based on comprehensive assessment as outlined by guidelines established in IDEA.

**Purpose**

Federal law mandates that each student receiving special education and related services must have an Individualized Education Program (IEP) developed for them. An IEP must be designed and written specifically for one student, outlining individualized needs, and used to establish an appropriate educational placement. Some consider the IEP to be a “management” program to guide appropriate service delivery, which includes the area of physical education. The IEP creates an opportunity for teachers, parents, school administrators, related services personnel and students (when appropriate) to work together to improve educational results for learners with disabilities.

**Steps in the Assessment and IEP Processes**

1. Referral: A student can be referred by several sources including a teacher, parent, or administrator.
2. Parent Permission: Prior to assessment parent permission is required.
   - 15 days to get the parents permission after the referral.
3. Screening: A non-required preliminary step to determine if a full evaluation is necessary.
4. Assessments: Comprehensive assessment should include formal tests, observations, and conversations with individuals involved in the student's education.
   - Examples of Formal Tests (norm and standardized): TGMD-2, BOT-2, APEAS-II, CTAPE.
   - Conversations: general physical educator, parent, classroom teacher, OT, PT, special educator, and student.
   - Observations: in the natural setting, student and teacher.
IEP Timeline

1. 60 days from when parent permission is received, the evaluation should be completed.
2. Revisit the IEP once per year.
3. Re-evaluate the IEP every 3 years unless an IEP team member requests otherwise.

Who is qualified/responsible/or should provide the assessment?

- The manner in which assessments are implemented are determined by state guidelines. Contact your state department of education for further guidance.
- IDEA guidelines state assessment must be administered by trained and knowledgeable personnel ([614(3)(a)(iv)]). However, trained and knowledgeable are not clearly defined. Best practice involves administration of adapted physical education assessment by a physical educator who has training and knowledge of the general physical education curriculum, the nature of the student's disability, underlying bases of motor control, behavioral evaluation as applied to the physical education environment, and a variety of adapted physical education evaluation tools.

Role of the Regular Physical Educator in maintaining the IEP

- Be an active member of the IEP team.
- Be in constant communication with members of the IEP team
- Document progress and achievement of IEP goals.
- Provide students with appropriate learning opportunities and modify teaching strategies
- Assess the student in the areas of motor skills, sports skills, and physical fitness
- Work closely with the related service providers, such as the physical therapist, occupational therapist, and speech therapist
- Talk with administration and make sure he/she understands the importance of your participation in all phases of the IEP process (assessment, team meetings, goal writing, updates, etc.)
IEP Tips

1. Be positive
2. State strengths and progress first
3. State growth needs, not weaknesses
4. Make parents feel comfortable (chat, eye-contact, smile, care)
5. Bring documentation of results and progress
6. Allow conversation, but move forward if needed
7. Propose pertinent, measurable, and attainable goals
8. Don’t expect perfection
9. Communicate well
10. Explain the results of the test
11. Bring video documentation to back up your data

Placement Options

What is the relationship between placement and the IEP?

Decisions based on IDEA qualifications are generally discussed and determined during and Individual Education Plan (IEP) meeting. IEP recommendations for services and supports must consider a student's unique needs, the most appropriate environment (Least Restrictive Environment).". The Least Restrictive Environment will be based upon the assessment process and where the IEP goals can best be met. There are a variety of placement option which should be considered including:

- Full-time General PE (GPE)
- General PE with a younger class
- Part-time Adapted PE (GPE for some units or parts of a lesson)
- Reverse Mainstreaming
- Small Group or One on One PE
- Separate School
- Home/Hospital
Adaptations

APE teachers do not need to reinvent the wheel when it comes to adapting games for their students. You can use the regular physical education curriculum, but modify it for your students so they are safe and successful.

The four areas of modification are;

Rules – By changing the rules you will provide students with the opportunity to be successful. For example, a student who uses a wheelchair may only get out if others tag them on a certain area of the chair, ex: right foot rest. Provide students with an alternative to the rules so they can be included and successful in activities.

Equipment- Objects should vary in size, shape, color, weight, and texture. For example, a student with a visual impairment could use a ball with bells inside so they can use auditory tracking. A catapult works great for students who may have cerebral palsy or limb limitations during throwing and aiming activities. Students with autism respond well to color cueing. For example, when playing a game involving running the bases you can make each one a different color and tell them to run their a lot easier than saying the name of the base.

For any activity it is easy to increase the size of the ball, replacing balls with balloons, providing larger rackets, lowering the net, providing manipulatives with different textures, colors, etc.

Environment- Vary the size of the playing area (larger or smaller) depending on your students’ ability. If you are planning on changing equipment throughout the lesson place a mat or sheet around it. This will eliminate distractions for the students.

Instruction – Examples include using a variety of different instructional strategies such as verbal, visual, guided discovery and peer teaching. Your instruction may be different for every individual. A great tool for students with autism is using picture schedules. Explanation provided:

General Adaptation Suggestions from PE Central
ADAPT-A-BAG

- An adapt-a-bag is a bag with quick helpful objects to aid in modifications of activities for individuals with disabilities.

- Possible adapt-a-bag items include: Tape, Velcro, String, Dry Erase Board, Bells, Balloons, PVC Pipe, Straws, Bubbles, Bubble Wrap, Cards, Rubber Bands, Bungee Cord, Milk Jug, Football Tee, Zip Ties, Twist Ties, Cue Cards, Poker Chips, Magnets, Cardboard Tube, and Plastic Cups.

Transition

Transition is defined as movement, passage, or change from one stage to another. In adapted physical education, this process occurs when a student moves from early childhood programs to elementary school, middle school, and high school, and lastly into the community (TWU). Postsecondary transition planning must be included in the first Individualized Education Plan (IEP) that will be in effect when the child turns 16 years of age.

Transition, as defined by the Individuals with Disabilities Education Act of 2004 (IDEA), is “...a coordinated set of activities for a student, designed within a results-oriented plan, which promotes movement from school to post-school activities, including post secondary education, vocational training, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation. Not every transition program will be the same; it is dependent upon the individual’s strengths, preferences, and interests) It is important for physical educators to provide transition programming to help students with disabilities move toward active community involvement and to promote healthy and independent lifestyles.

Physical educators can address transition by identifying accessible community resources in which students with disabilities can participate. An ecological analysis can be completed to assess student independence and necessary levels of support for successful participation. Best practice involves including physical recreation transition goals on the student's individual transition plan.
When completing assessment for transition, it is important to identify activities the family enjoys. This is done so the student can be taught the essential skills required to be able to participate with the family. Leisure interest surveys can be completed with the student and the family. Sample leisure activities may include the following:

- Water Sports
- Bowling
- Rock Climbing
- Gymnastics
- Golf
- Canoeing
- Horseshoes
- Bicycling
- Equestrianism

Once assessment is complete, and Individual Transition Plan can be developed with goals and objectives written in person first language, specific to the individual student to ensure their abilities to function in the community when they graduate. The members involved in developing the Individual Transition Plan should be the IEP team members. The IEP team members should have the following questions in mind:

1. What interests or hobbies do the students and his or her family enjoy doing?
2. What knowledge and competencies does the student need in order to move from school-based to community based living in their particular community.
3. What knowledge and prior experience does the student already have?
4. What knowledge and experience will the student need to be successful?
5. What will the student's living situation be like after high school?
6. Will the student be employed in the area? Will working interfere with recreation/leisure time? If so, how will the student stay active?

As is true in most aspects of adapted physical education, the skills practiced during the transition process tend to be most successful when the students have an opportunity to contribute to the
decision making process. Also, providing sufficient amounts of repeated trials will drastically improve the students' level of success.

While teaching students leisure activities, it is critical to provide information of appropriate facilities. Community clubs, organizations, and parks provide many opportunities for students to remain active. Many community resources have programs specifically designed for individuals with disabilities. The adapted physical education teacher should be familiar with these programs and utilize them as a regular part of the students' transition program. The APE teacher should also stress functional transition skills, such as the proper use of fitness equipment or how to use an electronic identification card to sign in at a fitness center. Individuals with disabilities who have greater access to, and actively participate in recreation and leisure activities are more satisfied with their lives. In addition, when engaged in recreation and leisure activities, opportunities of success in communities increases for individuals with disabilities. The formation of a reverse mainstreaming physical education program will also help in the transition of the student with a disability. This program can benefit both the student with a disability and the peer mentor as together they will attempt to achieve better physical fitness skills, improved social skills, and higher standards of social and personal responsibilities.

Additional transition programming should empower the student how to:

- Find information about the activity
- Find hours of operation for facilities
- Figure out transportation
- Know how to perform the activity independently
- Find a way to fit the activity into the individual's weekly schedule.

Example of a Transition Plan

Making a Leisure Transition Plan (LTP) is a great way to help and aid an individual with a disability during the transition process. The purpose of the LTP is to develop the student's ability to select and participate in activities in the community during his or her free time. Specialists from the APE field must be aware of physical recreation opportunities available in the community; determine the student's activity interests, preferences, and needs; and then include
these activities in the student's physical education curricula and LTP. Here is an example of a LTP:

**Transition Goal #1**

Cindy will increase her awareness and use of public transportation.

**Transition Activities**

- Cindy will meet with a representative from public transportation to discuss bus routes.
- Cindy will experience getting on and off a bus with the use of a lift, while in her wheelchair.
- Cindy will verbally demonstrate her understanding of the proper way to anchor a wheelchair inside the bus.
- Cindy will map out a schedule to and from a destination (field trip), identifying bus routes, departure, and arrival times.
- Cindy will use public transportation as a means of transportation for a field trip.
- Cindy will meet with a representative of public transportation to receive information on rules and regulations, cost, and how to schedule trips.
- Cindy will experience getting in and out of a public transportation while in her wheelchair.
- Cindy will receive information to share with her parents on the procedure for obtaining an ADA card (use with public transportation).
- Cindy will call to schedule transportation for a field trip using public transportation.
- Cindy will travel on a field trip using public transportation for transportation.
- Cindy will meet with a representative from public transportation to discuss how to schedule trips.
- Cindy will schedule transportation for a field trip with Public Transportation.
- Cindy will use public transportation as a means of transportation for a field trip.
Transition Goal #2

Cindy will increase her awareness of local recreational areas.

Transition Activities

- Cindy will identify areas in her community she would like to recreate at.
- Cindy will learn specific activities she would like to participate in throughout her community.
- Cindy will plan a time frame and route to visit these areas.
- Cindy will visit these recreational areas with a family member or supervising adult to see what she can participate in.
- Cindy will reflect on these experiences and decide if she would like to return.
- Cindy will gradually work to visit these locations on her own or with other friends.

Transition Goal #3

Cindy will plan and take field trips into the community to visit sites that offer physical activities that she has indicated are of interest to her. She will observe or participate in these activities while on the field trip. Cindy will evaluate each experience.

Transition Activities

- Cindy will identify locations and activities she would like to explore in the community.
- Cindy will discuss with the APE specialist and/or community resource person what preparations and arrangements need to be made prior to going on the field trip (i.e. time schedules, transportation, clothing, equipment, accommodations/adaptations, and money).
- Cindy will make arrangements for the field trip with the APE specialist and/or community resource personnel.
Cindy will fill out a critique form after each community experience. Critique will address accessibility, effectiveness of accommodations/adaptations, atmosphere of community setting (i.e. friendly, helpful), and personal reactions on enjoyment and possible future participation.

Many of the activities done in adapted physical education are also done in competition. As part of transitioning to life after school an adapted physical education teacher can let the students know about athletic competitions and associations for the activities done in adapted physical education. Some organizations include: the National Beep Baseball Association, the National Disability Sports Alliance (NDSA), Special Olympics International (SOI), the American Wheelchair Bowling Association (AWBA), the United States Association of Blind Athletes (USABA), and the Disabled Sports USA (DSUSA). These and other organizations like them can also introduce the students to new activities such as beep baseball, which is a baseball game played by individuals with visual impairments and others using blindfolds. As the name suggests they use a ball that beeps as well as bases that beep. These organizations and competitions can help students get interested in an activity that will keep them active for a lifetime.

There are also Guides that help individuals and their parents write their own transition plans.

Example of a Checklist that a family or individual may use to see their progress in developing their transition plan.

People Involved in Individual Transition Plan

These people may be involved

Direct Service Providers

- Special Educators
- Hospital/Home bound Instructors
- Instructors in Institutions and other settings
- Adapted Physical Educators
• General Physical Educators
• Vision, Orientation and Mobility Specialists

**Advocacy for Transition**

With respect to transition, adapted physical educators should first and foremost advocate that their own involvement in the post-school transition process be indicated on their students’ Individualized Education Program (IEP). Some other areas in transition which should be brought to the attention of administrators and community officials are implementing ways in which physical activity sites can become more accessible, advocating that students with disabilities be able to participate in the entire continuum of sports programs (integrate and segregated) sponsored by the school and community; and helping parents rally for appropriate community recreation and sport opportunities for their children with disabilities.
Wrestling

Wrestling is an ancient martial art that uses grappling type techniques such as clinch fighting, throws and takedowns, joint locks, pins and other grappling holds. A wrestling bout is a physical competition, between two (occasionally more) competitors or sparring partners, who attempt to gain and maintain a superior position. There are a wide range of styles with varying rules with both traditional historic and modern styles. Wrestling techniques have been incorporated into other martial arts as well as military hand-to-hand combat systems.

The term wrestling is an Old English word that originated some time before 1100 A.D. It is perhaps the oldest word still in use in the English language to describe hand-to-hand combat. The Merriam-Webster online dictionary defines wrestling as "a sport or contest in which two unarmed individuals struggle hand-to-hand with each attempting to subdue or unbalance the other".

Roget's New Millennium Thesaurus does not support the usage of 'wrestling' (noun) and 'grappling' (noun) as synonymous.

History of wrestling

Weaponless combat sports have existed since prehistoric times. Wrestling history has recorded various forms of wrestling (and boxing), and many of the details as to how they have evolved.
Some of the earliest accounts of wrestling, can be found in wrestling mythology.

Prehistoric times

In Mesopotamia and Egypt, forms of belt wrestling were popular, in prehistoric times.

Asia

Shuai Jiao, a wrestling style originating in China, is arguably the most ancient of all Chinese martial arts, with a reported history of over 4,000 years. (The date may be legendary, but wrestling was reportedly used by the Yellow Emperor during his fight against the rebel Chih Yiu and his army in 2697 BC.) During these matches, the combatants reportedly wore horned helmets that they used to gore their opponents while using a primitive form of grappling. This early style of combat was first called Jiao Ti (butting with horns). Throughout the centuries, the hands and arms replaced the horns while the techniques increased and improved. The name Jiao Ti also changed over time, both through common usage and government decree.

Mediterranean

The first documented evidence of wrestling in Egypt appeared circa 2300 BC, on the tomb of the Old Kingdom philosopher Ptahhotep. During the period of the New Kingdom (2000-1085 BC), additional Egyptian artwork (often on friezes), depicted Egyptian and Nubian wrestlers competing. Carroll notes striking similarities between these ancient depictions and those of the modern Nuba wrestlers. On the 406 wrestling pairs found in the Middle Kingdom tombs at Beni Hasan in the Nile valley, nearly all of the techniques seen in modern freestyle wrestling could be found. During the period of Ancient Greece (about 1100 to 146 BC), Greek wrestling was a popular form of martial art in which points were awarded for touching a competitor's back to the ground, forcing a competitor to submit or by forcing a competitor out of bounds (arena). Three falls determined the winner. It was at least featured as a sport since the eighteenth Olympiad in 704 BC. Wrestling is described in the earliest celebrated works of Greek literature, the Iliad and the Odyssey. Wrestlers were also depicted in action on many vases, sculptures, and coins, as well as in other literature. Other cultures featured wrestling at royal or religious celebrations, but the ancient Greeks structured their style of wrestling as part of a tournament where a single winner
emerged from a pool of competitors. Late Greek tradition also stated that Plato was known for wrestling in the Isthmian games.

This continued into the Hellenistic period. Ptolemy II and Ptolemy III of Egypt were both depicted in art as victorious wrestlers. After the Roman conquest of the Greeks, Greek wrestling was absorbed by the Roman culture and became Roman Wrestling during the period of the Roman Empire (510 BC to AD 500). Arabic literature depicted Muhammad as a skilled wrestler, defeating a skeptic in a match at one point. By the eighth century, the Byzantine emperor Basil I, according to court historians, won in wrestling against a boastful wrestler from Bulgaria.

Middle Ages

In 1520 at the Field of the Cloth of Gold pageant, Francis I of France threw Henry VIII of England in a wrestling match. In Henry VIII's kingdom, folk wrestling in many places was widely popular and had a long history. In particular, the Lancashire style may have formed the basis for Catch wrestling also known as "catch as catch can." The Scots later formed a variant of this style, and the Irish developed the "collar-and-elbow" style which later found its way into the United States. The French developed the modern Greco-Roman style which was finalized by the 19th century and by then, wrestling was featured in many fairs and festivals.

Modern

Because of that and the rise of gymnasiums and athletic clubs, Greco-Roman wrestling and modern freestyle wrestling were soon regulated in formal competitions. This regulation caused wrestling to degenerate into an excuse for sweaty men to grab at each other whilst wearing only small spandex outfits. On continental Europe, prize money was offered in large sums to the winners of Greco-Roman tournaments, and freestyle wrestling spread rapidly in the United Kingdom and in the United States after the American Civil War. Professional wrestling soon increased the popularity of Greco-Roman and freestyle wrestling around the world with such competitors as Georg Hackenschmidt, Kara Ahmed, Paul Pons, Stanislaus Zbyszko, William Muldoon, and Frank Gotch.\[8\][10] When the Olympic games resurfaced at Athens in 1896, Greco-Roman wrestling was introduced for the first time. After not being featured in the 1900 Olympics, sport wrestling was seen again in 1904 in St. Louis; this time in freestyle competition.
Since then, Greco-Roman and freestyle wrestling have both been featured, with women's freestyle added in the Summer Olympics of 2004. Since 1921, the International Federation of Associated Wrestling Styles (FILA) has regulated amateur wrestling as an athletic discipline, while professional wrestling has largely become infused with theatrics but still requires athletic ability.

**Mythology**

Some of the earliest references to wrestling, can be found in wrestling mythology.

- The Mahabharata describes the encounter between the accomplished wrestlers Bhima and Jarasandha.
- The Epic of Gilgamesh: Gilgamesh established his credibility as a leader, after wrestling Enkidu.
- Greek mythology celebrates the rise of Zeus as ruler of the earth after a wrestling match with his father, Cronus. Both Heracles and Theseus were famous for their wrestling against man and beast.

**By country**

- Shuai Jiao, a wrestling style originating in China, has a reported history of over 4,000 years.
- In Pharaonic Egypt, wrestling has been evidenced by documentation on tombs (circa 2300 BC) and Egyptian artwork (2000-1085 BC).
- Greek wrestling was a popular form of martial art, at least in Ancient Greece (about 1100 to 146 BC).
- Roman Wrestling: After the Roman conquest of the Greeks, Greek wrestling was absorbed by the Roman culture and became Roman Wrestling during the period of the Roman Empire (510 BC to AD 500).
Arabic literature depicted Muhammad as a skilled wrestler, defeating a skeptic in a match at one point. By the eighth century, the Byzantine emperor Basil I, according to court historians, won in wrestling against a boastful wrestler from Bulgaria.

In 1520 at the Field of the Cloth of Gold pageant, Francis I of France threw fellow king Henry VIII of England in a wrestling match.

The Lancashire style of folk wrestling may have formed the basis for Catch wrestling, also known as "catch as catch can." The Scots later formed a variant of this style, and the Irish developed the "collar-and-elbow" style which later found its way into the United States.[6]

A Frenchman [n 1] “is generally credited with reorganizing European loose wrestling into a professional sport”, Greco-Roman wrestling. This style which was finalized by the 19th century and by then, wrestling was featured in many fairs and festivals, in Europe.

**Modern**

Greco-Roman wrestling and modern freestyle wrestling were soon regulated in formal competitions, in part resulting from the rise of gymnasiums and athletic clubs.

On continental Europe, prize money was offered in large sums to the winners of Greco-Roman tournaments, and freestyle wrestling spread rapidly in the United Kingdom and in the United States after the American Civil War. Wrestling professionals soon increased the popularity of Greco-Roman and freestyle wrestling, worldwide.

- Greco-Roman wrestling became an event at the first modern Olympic games, in Athens in 1896. Since 1908, the event has been in every Summer Olympics.

- Freestyle wrestling became an olympic event, in 1904. Women's freestyle wrestling was added to the Summer Olympics in 2004.
Since 1921, the International Federation of Associated Wrestling Styles (FILA) has regulated amateur wrestling as an athletic discipline, while professional wrestling has largely become infused with theatrics but still requires athletic ability.

**International disciplines (non-folk styles)**

Wrestling disciplines defined by FILA, are broken down into two categories; International wrestling disciplines and folk wrestling disciplines. According to the International Federation of Associated Wrestling Styles, there are five current International wrestling disciplines acknowledged throughout the world. They are Greco-Roman Wrestling, Freestyle Wrestling, Grappling, Beach wrestling and Sambo.

**Folk wrestling**

A folk wrestling style is a traditional wrestling discipline which may or may not be codified as a modern sport. Most human cultures have developed their own sort of grappling style unique from other styles practiced. While many styles in the Western culture may have their roots in Ancient Greece other styles, particularly those from Asia, developed independently.

**List of folk wrestling styles**

**Europe**

*Further information:* European martial arts and Greco-Roman wrestling

**British Isles**

Traditionally wrestling has two main centers in Great Britain: the West Country, where the Devonshire and Cornwall styles were developed, and in the Northern counties, the home of the Cumberland and Westmorland styles.
North Country styles

- Lancashire wrestling is a historic wrestling style from Lancashire in England known for its "Catch-as-catch-can", or no wrestling holds barred, style.
  - Catch wrestling, or Catch-as-catch-can, originated from Lancashire wrestling but was further developed during the traveling circus phenomenon of the 19th and early 20th century United States.

- **Backhold Wrestling**, whose origin is unknown, was practiced in North England and Scotland in the 7th and 8th century but competitions are held in present day at the Highland and Border Games as well as in France and Italy. Styles of Backhold are distinct from Lancashire Wrestling because they enforce rules designed to minimize injury to the participants by disallowing ground fighting.
  - Cumberland and Westmorland wrestling, or **Cumbrian Wrestling**, is practiced in the northern counties of England. It is a form of Backhold Wrestling where the wrestlers put the left arm over the opponents right arm and grip behind the opponent's back. Throws and trips are important since the first wrestler to touch the ground or break hold loses. Competitors often wear stockings (long johns), singlet and trunks.
  - Scottish Backhold is a form of Backhold practiced in Scotland. Almost identical in style to Cumberland & Westmorland style apart from variations in rules. Competitors often wear kilts.

West Country styles

- Cornish wrestling, from Cornwall, England, is a form of jacket wrestling. It does not use groundwork. It is related to Breton Gouren wrestling.

- Devon wrestling, or **Devonshire wrestling**, is a style similar to the Cornish style in that jackets were worn. Devonshire wrestlers, however, also wore heavy clogs and were able to kick the opponents. In Cornish vs Devon matches the Devonshire wrestlers might wear one only shoe. The style is generally considered to be extinct.
Ireland

- Collar-and-elbow wrestling is native to Ireland and can be traced back to the 1600s but it has ties to the Games of Tailtinn between 632 BC and 1169 AD.

Nordic countries

- Glima, the national sport of Iceland, traces its history to the Vikings and the Norse. It is a standing style, utilising a leather harness around the waist and thighs, which the wrestlers hold (making it a form of belt-wrestling). It is often practised indoors on a wooden floor, hence hard throws are often discouraged.

Continental Europe

- **Chidaoba**, a Georgian wrestling style
- Gouren, from Brittany, is a form of jacket wrestling, similar to **Cornish wrestling**
- **Gulesh**, a Azerbaijani wrestling style
- **Kokh** is a traditional Armenian style of wrestling
- **Lotta Campidanesa** from Italy, is a form of collar, jacket and belt wrestling practised by countrymen and shepherds in southern Sardinia
- **Lucha Canaria**, or Canarian wrestling, native to the Canary Islands in Spain, touching ground (non-foot) loses
- Lucha Leonesa, native to the Spanish region of Leon, touching ground (non-foot) loses
- Schwingen is the Swiss style of wrestling considered to be one of the oldest forms of wrestling. Wrestlers wear special canvas trousers
- **Strumpa**: Sardinian wrestling, in Italy also known as S'Istrumpa or simply Istrumpa
- **Trântă**: Upright wrestling from Moldova; it can also be practised from the knees. It is still practised in Moldova and eastern Romania
- **Trîntă**, a Romanian wrestling style
Asia

Near East

- Iranian Wrestling or "Koshti". Includes the Iran-wide Pahlavani, and numerous other provincial styles.

- Yaşlı güreş is Turkish "oil wrestling". Wrestlers wear special leather trousers 'kyspet' and are oiled.

Central Asia

- Bökh, traditional Mongolian wrestling, where a ground-touch loses.
- Köräș, a Tatar wrestling style
- Kurash is a traditional form of wrestling in the ethnically Turkic region of Tuva, in southern Siberia.
- Küres is a traditional form of wrestling in Kazakhstan, where leg holds are not allowed, instead a wrestler can trip legs. Ground touch loses.

South Asia

Main article: Indian wrestling

- Pehlwani or Kushti is a modern form of wrestling from India.
- Inbuan is the traditional wrestling style of the Mizoram state of India.
- Malla-yuddha, traditional styles extant in South India
- Akhara, a folk wrestling style of India performed on a mud surface

Southeast Asia

- Naban: Burmese wrestling.
- Khmer Traditional Wrestling is a folk wrestling style from Cambodia.

- Penjang Gulat is a form of wrestling popular in rural Indonesia.
East Asia

- Shuai jiao: Chinese wrestling.
- Ssireum: Korean wrestling.
- Tegumi is the folk wrestling practiced in Okinawa.

Americas

- Luta Livre, Brazilian style of wrestling.
- Lucha Libre, Mexican style of wrestling.

Africa


Oceania

Coreeda- a modern synthesis that combines traditional Aboriginal dance, mainly in the form of kangaroo mimicry, with a style of wrestling performed around a yellow 4.5m diameter circle with black and red borders similar to the Aboriginal flag. Competitors wear knee length pants, a wide sash belt and a jersey that can be grabbed to assist in throws. It is based on similar games that were played in pre-colonial Australia and is usually performed during NAIDOC in the Western Suburbs of Sydney. Extinct indigenous Australian styles include turdererin from Southern Victoria, partambelin from Southern NSW, goombooboodoo from Western NSW, ami from Southern QLD and donaman/arungga from Northern QLD.

Epoo korio- a friendly style of wrestling done on Kiwai Island in the Fly River Delta of Western Province of Papua New Guinea, involved one wrestler who had to defend a small mound of sand which his opponent was trying to destroy.
Boumwane- the national style of Kiribati with a simple toppling victory performed during National Day celebrations, a similar sport is also played in Nauru.

Fagatua- the indigenous style of Tokelau used mainly to settle regional disputes between villages.

Hokoko- the indigenous style of the Kanaka Maoli of the Hawaii Islands, first recorded by crew members during the HMS Resolution's 1779 visit to the main island as part of the pa'ani'kahiko or 'ancient games', performed during the Makahiki New Year Festival. Along with mokomoko boxing it is a core skill of the bone breaking martial art of lua.

Moana- the indigenous style of the Ma'ohi of Tahiti and French Polynesia; along with teka (spear throwing), motora'a (boxing) and amoraa ofae (heavy stone lifting) will be included as part of the Heiva i Tahiti or traditional sports festival held in Papeete every July. A similar sport is also played in the Cook Islands during the Te Maeva Nui national day celebrations.

Mamau/ringa ringa- the indigenous style of the Maori of New Zealand, mainly used for warrior training but now occasionally being performed as part of the Matariki New Year Festivals as a recreational activity.

Pi'i tauva- the indigenous style of the Kingdom of Tonga was first seen by Europeans in 1777 in which the artist John Webber recorded in lithograph. It combined boxing and wrestling, being performed as entertainment for visitors by both men and women.

Taupiga- the indigenous style of the Samoan Islands saw the wrestlers greased up with coconut oil before competitions (similar to Turkish yagli gures) and was an important part of the inter-village gatherings.

Veibo- the indigenous style of Fiji was mainly used as a method of warrior training but also occasionally as a form of entertainment. In the early 20th century, indentured labourers were brought from India to work the cane fields and their style of wrestling, kushti, was fused with veibo to create a hybrid style similar to freestyle wrestling.
Mariwariwosu - the indigenous style of the Formosan Aboriginal people of Taiwan such as the Paiwan and Bunun tribes. Performed on a circular sandpit with competitors grabbing hold of their opponents large waist belts before the start of the match it involves many skillful throws and is an important part of the National Aboriginal Games.

Dumog - the indigenous style of the Visayan Islands of the Philippine archipelago, was performed on sandy beaches during rice harvest celebrations in pre-colonial times but is now done during the town saint's festivals. Opponents wore a colourful patterned bahag (loincloth) in the past to indicate which village he was from and were covered in tattoos and amulets to gain assistance from the spirit world. The object was to throw the opponent so that his back touched the ground, if he had to brush the sand off his back this was considered a loss. On the verge of extinction it can only be seen on rare occasions in the remote parts of Panay, Cebu and Negros.

**Martial arts originating from folk wrestling styles**

These sports could be considered too popular or formal to still be considered "folk sports". These styles form a part of international mainstream wrestling.

- Luta Livre Esportiva, Luta Livre Vale Tudo, which emphasises ground fighting and submissions
- Shuaijiao, the folkstyle of Northern China which includes Qiaoshou and Qinan in trainings but disallowed in competition. A standup style.
- Brazilian Jiu-Jitsu, which emphasises ground fighting and submissions.
- Collegiate wrestling, the folkstyle of the United States.
- Greco-Roman wrestling, now a major international style and Olympic sport.
- Kodokan Judo, founded by Jigoro Kano in 1882, currently an Olympic sport.
- Sambo, a Russian style based on various forms of folk wrestling in the former USSR and Judo.
- Shoot wrestling, a Japanese style primarily based on catch wrestling.
- Sumo, a famous Japanese wrestling style.
International Federation of Associated Wrestling Styles

The International Federation of Associated Wrestling Styles, also known in French as Fédération Internationale des Luttes Associées (FILA), is an international wrestling federation that holds events around the world. It is the governing body of international amateur wrestling. The main event of FILA is the FILA Wrestling World Championships.

Major wrestling sub-disciplines within FILA

Since 1994, FILA has come to set rules and regulations and hold international competitions in the following wrestling styles:

- Freestyle wrestling (separate committees and competitions for males and females)
- Beach wrestling
- Grappling
- Combat Grappling (a style of MMA-Mixed Martial Arts)
- Sambo (no more today)
- Traditional (or folk) wrestling (recognized separately by FILA, but not overseen by them internationally)

Adaptations to the international regulations set by FILA are usually made by each national federation for all national and regional competitions.

Events, Activities, and Honors

Besides the Summer Olympics, there is also the World Cup of wrestling that takes place every year. There are also various Games such as the Commonwealth Games, the Pan-American Games, etc. that have wrestling as an official sport. Also, the Continental Championships and Continental Cups usually take place annual and are regulated by each Continental Committee. Then, there are World Championships that usually take place among the various nations every year (for the senior age category, every year except the year the Summer Olympics are held), and many international tournaments that take place between countries and among wrestlers of the same country (such as the United States Nationals in freestyle and Greco-Roman).
These tournaments encompass a wide variety of age categories and also both genders, but can also take place separately for each gender or for each age category (schoolboys or schoolgirls, cadets, juniors, and seniors).

FILA recognised the Republic of Kosovo as a full member on 9 June.

FILA also sponsors training for athletes in the various wrestling styles at training centers, currently located in Finland, France, Italy, Japan, Spain, Turkey, and the United States. The International Wrestling Hall of Fame, located in Stillwater, Oklahoma awards individuals with honors in Greco-Roman wrestling, freestyle wrestling, women's wrestling, and officiating.

**Organization and Governance**

FILA is now based in Corsier-sur-Vevey, outside of Lausanne, Switzerland. The official languages are English and French. FILA is governed by a Congress made up of representatives from each of the 174 national wrestling federations (the nation's governing body for wrestling). National federations that at least govern the two Olympic wrestling styles are admitted as affiliate members. Those national federations exclusively govern traditional wrestling and other styles can be admitted as associated members. Up to three representatives from each federation may attend the conference, and only one may vote. The Congress meets at least every two years, usually during the Olympic games or during the World Championships that meet between Olympic games. The FILA Congress in turn elects members of the FILA Bureau and the FILA President.

The Bureau serves as the directing and administrating body of FILA. The FILA Bureau is composed of the president, four vice presidents, the Secretary General, 12 other elected members (with two seats reserved for women), the Presidents of the five Continental Committees, and an Honorary President who advises but has no vote (currently, Milan Ercegan). Honorary members are also in turn elected to the Bureau but do not vote. The President, the Vice Presidents, and the Secretary General make up the Executive Committee. Each of the members represents himself or herself personally and has an individual vote in the Congress. No two members represent the same nationality (exceptions may be made for the President, the two female members, the Continental Committee Presidents, and the Honorary President).
The FILA President manages the day-to-day affairs of the organization. The President represents FILA at international meetings, before the International Olympic Committee, and before the general public. The current President of FILA is Raphaël Martinetti from Switzerland who has served in that role since 2002. Bureau members and the President serve for six year terms and can be reelected. Usually one third of the Bureau members are up for reelection every two years.

A Secretary General is chosen by the bureau for six years and is the secondary director of FILA behind the President, serves as secretary of both the Bureau and the Congress, and maintains healthy communication between the national federations, the Continental Committees, the Commissions, and all the departments of FILA. The current Secretary General is Michel Dusson from France.

There are also auxiliary bodies of FILA. One group of auxiliary bodies is the Continental Committee, made up of each of the national federations on each continent (currently Africa, Asia, North and South America, Europe, and Oceania). The Continental Committees are directed by an executive bureau composed of a president, vice president, and 3 other members who all serve for a term of four years. Continental Committees meet at least every two years in the year following the Summer Olympics, in which there is usually the Continental Championship.

Other auxiliary bodies include commissions, which are made of a president, vice president, secretary, and four other members who all serve for four years. Commissions include those dealing with Technical issues; Officiating; Medical Safety and Anti Doping; Promotion; and for Athletes. The members of the commissions are nominated and financially supported by the national federations that they originate from and are generally specialists in the field that the commission supervises.

**Controversies and allegations of corruption**

Pelle Svensson, a former two-time world champion (Greco-Roman 100 kg class) and member of board of FILA from 1990 to 2007, has described FILA as an inherently corrupt organization. During the 2004 Summer Olympics in Athens, Svensson served as chairman of the disciplinary committee of FILA. As he was watching the final in the men's Greco-Roman wrestling 84 kg class between Alexei Michine from Russia and Ara Abrahamian from Sweden, Svensson
witnessed how the Russian team leader Mikhail Mamiashvili was giving signs to the referee. When Svensson approached him and informed him that this was not allowed according to the rules, Mamiashvili responded by saying: "you should know that this may lead to your death". Svensson later found proof that the Romanian referee was bribed (according to Svensson the referee had received over one million SEK). Mamiashvili currently serves as a member of board of FILA.

Svensson also spoke out in support of the allegations of corruption during the semifinals in the men's Greco-Roman wrestling 84 kg at the 2008 Summer Olympics in Beijing, when (again) Ara Abrahamian lost against Andrea Minguzzi from Italy after a controversial ruling by the referee. It was later reported that the referee of the match, Jean-Marc Petoud from Switzerland, is a first cousin of the current President of FILA Raphaël Martinetti. Abrahamian, who was stripped of his bronze medal in the 2008 Beijing Summer Olympics after dropping the medal in protest, has received a level of vindication through the Court of Arbitration for Sport (CAS). His protest revolved around a second round bout with Italian Andrea Minguzzi, where a penalty wasn't assessed until after the round had concluded. Abrahamian's coach was denied a chance to review the call via video, and FILA also refused an official protest from the coach. Mr. Minguzzi later took gold in the event.

CAS ruled in favor of Abrahamian that in future Olympic matches FILA must have an appeals process that affirms the Olympic Charter in addition to FILA's own rules concerning fair play:

"FILA is required by the Olympic Charter and its own internal rules, to provide a procedure in its rules for an appeal jury (or some equivalent) to hear promptly claims by athletes or others affected that in a competition the relevant officials have not complied with FILA rules and procedures. Article 22 of its Wrestling Rules may provide such a procedure.

If so, FILA should clarify that mechanism. In any event, FILA did not follow Article 22 properly, if at all, or provide any other appropriate appeal mechanism in this case. The Athlete is also entitled to invoke the disciplinary process contemplated by Article 36 of the Constitution."

In their ruling, the CAS judges specifically noted the absence of FILA officials at the Abrahamian hearing:
"On 21 August 2008, FILA corresponded with the CAS and indicated it was unavailable to attend the hearing at the proposed time and date. In order to allow the attendance of FILA’s officials at the hearing, the Panel offered a different time that would be suitable to all parties. FILA repeated that it would not attend the hearing.

Greco-Roman wrestling

Greco-Roman wrestling is a style of wrestling that is practiced worldwide. It was contested at the first modern Olympic Games in 1896 and has been included in every edition of the summer Olympics held since 1908. Two wrestlers are scored for their performance in three two-minute periods, which can be terminated early by a pinfall. This style of wrestling forbids holds below the waist which is the major difference between itself and freestyle wrestling, the other form of wrestling at the Olympics. This restriction results in an emphasis on throws, since a wrestler cannot use trips to take an opponent to the ground or avoid throws by hooking or grabbing their opponent's leg.

Arm drags, bear hugs, and headlocks found in Freestyle have greater prominence in Greco-Roman and throws especially known as a suplex are used, in which the offensive wrestler lifts his opponent in a high arch while falling backward on his own neck to a bridge in order to bring his opponent's shoulders down to the mat. Even on the mat, a Greco-Roman wrestler must still find several ways to turn his opponent's shoulders to the mat for a fall without legs, including (but not limited to) techniques known as the bodylock and the gut-wrench.

According to the International Federation of Associated Wrestling Styles (FILA), Greco-Roman wrestling is one of the six main forms of amateur competitive wrestling practiced internationally today. The other five forms are Freestyle wrestling, Grappling/Submission wrestling, Beach wrestling, Pankration athlima, Alysh/Belt wrestling and Traditional/Folk wrestling.

History

The name "Greco-Roman" was applied to this style of wrestling as a way of purporting it to be similar to the wrestling formerly found in the ancient civilizations surrounding the Mediterranean Sea. Despite the implications of its name, it is a modern style, of relatively recent origin. It was
devised in France during the decades following the Napoleonic wars. It is speculated that many styles of European folk wrestling may have spurred the origins of Greco-Roman wrestling. According to FILA, a Napoleonic soldier named Exbroyat first developed the style. Exbroyat performed in fairs and called his style of wrestling "flat hand wrestling" to distinguish it from other forms of hand-to-hand combat that allowed striking. In 1848, Exbroyat established the rule that no holds below the waist were to be allowed; neither were painful holds or torsions that would hurt the opponent. "Flat hand wrestling" or "French wrestling" (as the style became known) developed all throughout Europe and became a popular sport. The Italian wrestler Basilio Bartoletti first coined the term "Greco-Roman" for the sport to underline the interest in "ancient values." Many others in the 18th and 19th centuries sought to add value to their contemporary athletic practices by finding some connections with ancient counterparts. The 18th century work Gymnastics for Youth by Johann Friedrich Guts Muths described a form of schoolboy wrestling called "orthopale" (used by Plato to describe the standing part of wrestling) that did not mention any lower-body holds. Real ancient wrestling was quite different; see Greek wrestling.

The British never really enjoyed Greco-Roman wrestling in comparison to its more unrestrictive counterpart, freestyle, but on the continent, the style was highly promoted. Almost all the continental European capital cities hosted international Greco-Roman tournaments in the 19th century, with much prize money given to the place winners. For example, the Czar of Russia paid 500 francs for wrestlers to train and compete in his tournament, with 5,000 francs awarded as a prize to the tournament winner. Greco-Roman wrestling soon became prestigious in continental Europe and was the first style registered at the modern Olympic games, beginning in Athens in 1896 with one heavyweight bout, and grew in popularity during the 20th century. It has always been featured in the Olympic games, except during the Paris Olympic Games in 1900 and the St. Louis Olympic Games of 1904, when freestyle first emerged as an Olympic sport.

Greco-Roman wrestling never really caught on in the English-speaking world, despite its connection in style to many British styles of folk wrestling and the efforts of William Muldoon (a successful New York barroom freestyle wrestler who served in the Franco-Prussian War and learned the style in France) to promote it in the United States after the Civil War. Muldoon's matches in particular drew large crowds but failed to gain a foothold among Americans. Instead,
freestyle became the wrestling of choice in Great Britain and the United States, where it later influenced the development of collegiate wrestling.\cite{1} Perhaps, the most well-known of Greco-Roman wrestlers in the nineteenth century was Georg Hackenschmidt born in Estonia and nicknamed "The Russian Lion." Hackenschmidt in 1898 at the age of 21 and with 15 months of training defeated the experienced Paul Pons in a match in St. Petersburg, Russia. In 1900, he won professional tournaments in Moscow and St. Petersburg and a series of international tournaments after that. After defeating Tom Jenkins (from the United States) in both freestyle and Greco-Roman matches in England, Georg Hackenschmidt wrestled exclusively freestyle in order to compete better against English, Australian, and American opponents. Winning more than 2,000 victories in Greco-Roman and freestyle, Hackenschmidt served as the physical education adviser to the House of Lords after his retirement.

Professional matches in Greco-Roman wrestling were known for their great brutality. Body slams, choke-holds, and head-butting was allowed, and even caustic substances were used to weaken the opponent. By the end of the nineteenth century, gouging with the nails, punching, and violently slamming the arms together around the opponent's stomach were forbidden. Greco-Roman matches were also famous for their length. Professionally, it was not uncommon for there to be matches lasting two or three hours. William Muldoon's bout with Clarence Whistler at the Terrace Garden Theater in New York lasted eight hours before ending in a draw. Even in the 1912 Olympics, a match between Anders Ahlgren of Sweden and Ivar Boehling of Finland lasted for nine hours before a draw was called and both wrestlers awarded the silver medal. The International Amateur Wrestling Federation (IAWF) took over the regulation of Greco-Roman wrestling in 1921. Since then matches have been dramatically cut short, and today all movements that put the life or limb of the wrestler in jeopardy are forbidden.

In Olympic competition, countries of the former Soviet Union, Bulgaria, Turkey, South Korea, Romania, Japan, Sweden, and Finland have had great success. Carl Westergren of Sweden won three Greco-Roman gold medals in 1920, 1924, and 1932, and was the first Greco-Roman wrestler to do so. Alexander Karelin did the same in 1988, 1992, and 1996. Ivar Johansson of Sweden won gold medals in Greco-Roman in 1932 and 1936 and also a gold medal in freestyle in 1932. The United States Olympic delegation (exclusively wrestling freestyle before) first entered Greco-Roman wrestling in 1952 and has taken three gold medals, won by Steve Fraser
and Jeffrey Blatnick in the 1984 Los Angeles Olympic Games, and by Rulon Gardner at the 2000 Olympic Games in Sydney, Australia.

**Weight classes**

Currently, international Greco-Roman wrestling is divided into four main age categories: schoolboys, cadets, juniors, and seniors. Schoolboys (young men ages 14–15; or age 13 with a medical certificate and parental authorization) wrestle in 10 weight classes ranging from 29 to 85 kg. Cadets (young men ages 16–17; or age 15 with a medical certificate and parental authorization) wrestle in 10 weight classes ranging from 39 to 100 kg. Juniors (young men ages 18 to 20; or age 17 with a medical certificate and parental authorization) wrestle in eight weight classes ranging from 46 to 120 kg. Seniors (men ages 20 and up) wrestle in seven weight classes ranging from 50 to 120 kg. For men, there is also a special category for some Greco-Roman competitions, "Veterans", for men ages 35 and older, presumably featuring the same weight classes as seniors.[8] Also, all of the men's age categories and weight classes can be applied to freestyle wrestling. Wrestlers after weigh-in may only wrestle in their own weight class. Wrestlers in the senior age category may wrestle up a weight class except for the heavyweight division (which starts at a weight more than 96 kg for the men). Different nations may have different weight classes and different age categories for their levels of Greco-Roman competition.

**Structure of the tournament**

A typical international wrestling tournament takes place by direct elimination with an ideal number of wrestlers (4, 8, 16, 32, 64, etc.) in each weight class and age category competing for placement. The competition in each weight class takes place in one day. The day before the wrestling in a scheduled weight class and age category takes place, all the applicable wrestlers are examined by a physician and weighed-in. Each wrestler after being weighed on the scale then draws a token randomly that gives a certain number.

If an ideal number is not reached to begin elimination rounds, a qualification round will take place to eliminate the excess number of wrestlers. For example, 22 wrestlers may weigh-in over the ideal number of 16 wrestlers. The six wrestlers who drew the highest numbers after 16 and
the six wrestlers who drew the six numbers immediately before 17 would then wrestle in six matches in the qualification round. The winners of those matches would then go on to the elimination round.

In the elimination round, the ideal number of wrestlers then pair off and compete in matches until two victors emerge who will compete in the finals for first and second place. All of the wrestlers who lost to the two finals then have the chance to wrestle in a repechage round. The repechage round begins with the wrestlers who lost to the two finalists at the lowest level of competition in the elimination round. The matches are paired off by the wrestlers who lost to one finalist and the wrestlers who lost to the other. The two wrestlers who win after every level of competition are the victors of the repechage round.

In the finals, the two victors of the elimination round compete for first and second place.

In all rounds of the tournament, the wrestlers compete in matches paired off in the order of the numbers they drew after the weigh-in.

After the finals match, the awards ceremony will take place. The first place and second place wrestlers will receive a gold and silver medal, respectively. (At the FILA World Championships, the first place wrestler will receive the World Championship Belt.) The two repechage round winners will each be awarded third place with a bronze medal. The two wrestlers who lost in the finals for the third place are awarded fifth place. From seventh place down, the wrestlers are ranked according to the classification points earned for their victories or losses. If there is a tie among wrestlers for classification points, the ranking is determined in this order from the highest to the lowest:

- Most victories earned by fall
- Most matches won by technical superiority
- Most periods won by technical superiority
- Most technical points scored in the tournament
- Least technical points scored in the tournament
Wrestlers who remained tied after that will be awarded placements "ex aequo." Wrestlers classified from the fifth to the 10th place will receive a special diploma. The wrestling tournaments in the Olympic Games and the Senior and Junior World Championships are designed to take place over three days on three mats.

**Layout of the mat**

The match takes place on a thick rubber mat that is shock-absorbing to ensure safety. For the Olympic Games, all World Championships, and World Cups, the mat has to be new. The main wrestling area has a nine meter diameter and is surrounded by a 1.5 meter border of the same thickness known as the **protection area**. Inside the nine meter in diameter circle is a red band of one meter in width that is on the outer edge of the circle and is known as the **red zone**. The red zone is used to help indicate passivity on the part of a wrestler; thus, it is also known as the **passivity zone**. Inside the red zone is the **central wrestling area** which is seven meters in diameter. In the middle of the central wrestling area is the **central circle**, which is one meter in diameter. The central circle is surrounded by a band 10 centimeters wide and is divided in half by a red line eight centimeters in width. The diagonally opposite corners of the mat are marked with the wrestlers' colors, red and blue.

For competition in the Olympic Games, the World Championships, and the Continental Championships, the mat is installed on a platform no greater than 1.1 meters in height. If the mat lays on a podium and the protection margin (covering and free space around the mat) does not reach two meters, then the sides of the podium are covered with 45° (degree) inclined panels. In all cases, the color of the protection area is different from the color of the mat.

**Equipment**

- A singlet is a one-piece wrestling garment made of spandex that should provide a tight and comfortable fit for the wrestler. It is made from nylon or lycra and prevents an opponent from using anything on the wrestler as leverage. One wrestler usually competes in a red singlet and the other in a blue singlet.
- A special pair of shoes is worn by the wrestler to increase his mobility and flexibility. Wrestling shoes are light and flexible in order to provide maximum comfort and
movement. Usually made with rubber soles, they help give the wrestler's feet a better grip on the mat.

- A handkerchief, also called a bloodrag is carried in the singlet. In the event of bleeding, the wrestler will remove the cloth from his singlet and attempt to stop the bleeding or clean up any bodily fluids that may have gotten onto the mat.

- Headgear, equipment worn around the ears to protect the wrestler, is optional in Greco-Roman. Headgear is omitted at the participant's own risk, as there is the potential to develop cauliflower ear.

The match

A match is a competition between two individual wrestlers of the same weight class. In Greco-Roman wrestling, a jury (or team) of three officials (referees) is used. The referee controls the action in the center, blowing the whistle to start and stop the action, and supervises the scoring of holds and infractions. The judge sits at the side of the mat, keeps score, and occasionally gives his approval when needed by the referee for various decisions. The mat chairman sits at the scoring table, keeps time, is responsible for declaring technical superiority, and supervises the work of the referee and judge. To call a fall, two of the three officials must agree (usually, the referee and either the judge or the mat chairman).

Period format

In Greco-Roman and freestyle, the format is now three two-minute periods. Before each match, each wrestler's name is called, and the wrestler takes his place at the corner of the mat assigned to his color. The referee then calls both of them to his side at the center of the mat, shakes hands with them, inspects their apparel, and checks for any perspiration, oily or greasy substances, and any other infractions. The two wrestlers then greet each other, shake hands, and the referee blows his whistle to start the period.

A wrestler wins the match when he has won two out of three periods. For example, if one competitor were to win the first period 1-0 and the second period 1-0, the match would be over. However, if the other competitor were to win the second period, then a third and deciding period would result. Only a fall, injury default, or disqualification terminates the match; all other modes
of victory result only in period termination. One side effect of this format is that it is possible for
the losing wrestler to outscore the winner. For example, periods may be scored 3-2, 0-4, 1-0,
leading to a total score of 4-6 but a win for the wrestler scoring fewer points.

As of 2005, each Greco-Roman period is broken up into a phase for wrestling from the neutral
position and a maximum of two par terre (ground wrestling) phases. During the wrestling phase
from the neutral position, both wrestlers compete for takedowns and points for 60 seconds as
usual. At the end of the first minute, in general, the wrestler who has scored the most points will
receive the advantage in an Olympic lift from an open par terre position on the other wrestler.
This position is known as **The Clinch**. If neither wrestler at this point has any points, the referee
will toss a colored disk, with a red-colored side and a blue-colored side. The wrestler who won
the colored disk toss will receive the advantage in the Olympic lift.

The wrestler who lost the colored disk toss then places his hands and knees in the center circle,
with the hands and knees at least 20 centimeters apart and the distance between the hands a
maximum of 30 centimeters. The arms of that wrestler would be stretched out, the feet would not
be crossed, and the thighs would be stretched out forming a 90 degree angle with the mat. The
wrestler who won the colored disk toss would then be allowed to step beside the wrestler on the
bottom, not touching him with his legs. If the wrestler who won the colored disk toss wished, he
could place one knee on the mat. The top wrestler would then wrap his hands and arms around
the bottom wrestler's waist and execute the Olympic lift (called an upside-down belt hold) at the
beginning of the first 30 seconds. The bottom wrestler could then attempt to defend himself.

At the end of first thirty seconds, the clinch position is reversed with the other wrestler receiving
the Olympic lift, and the period continuing for the remaining 30 seconds. The period is decided
by who accumulated the most points during both standing and ground phases. During each
ground phase, if the top wrestler cannot score, the other wrestler is awarded one point. In the
case of no scoring moves being executed during either ground phase the score will be 1-1, and in
this case generally the wrestler to score last will be awarded the period.

When the period (or match) has concluded, the referee stands at the center of the mat facing the
officials' table. Both wrestlers then come, shake hands, and stand on either side of the referee to
await the decision. The referee then proclaims the winner by raising the winner's hand. At the end of the match, each wrestler then shakes hands with the referee and returns to shake hands with his opponent's coach.

**Match scoring**

In Greco-Roman wrestling, as well as in freestyle wrestling, points are awarded mostly on the basis of explosive action and risk. For example, when one wrestler performs a grand amplitude throw that brings his opponent into the danger position, he is awarded the greatest number of points that can be scored in one instance. Also, a wrestler who takes the risk to briefly roll on the mat (with his shoulders in contact with the mat) could give a certain number of points to his opponent. Scoring can be accomplished in the following ways:

- **Takedown (1 to 5 points):** A wrestler is awarded points for a takedown when the wrestler gains control over his opponent on the mat from a neutral position (when the wrestler is on his feet). At least three points of contact have to be controlled on the mat (e.g. two arms and one knee; two knees and one arm or the head; or two arms and the head).

  - **(5 points)** - Five points are awarded for a takedown brought about by a throw of grand amplitude (a throw in which a wrestler brings his opponent off of the mat and controls him so that his feet go directly above his head) either from the standing or *par terre* position into a direct and immediate danger position.

  - **(3 points)** - Generally, three points are awarded for a takedown brought about by a grand amplitude throw that does not bring his opponent in a direct and immediate danger position or for a takedown in which a wrestler's opponent is taken from his feet or his stomach to his back or side (a throw of short amplitude) so that he is in the danger position.

  - **(1 point)** - One point is awarded for a takedown brought about by a wrestler taking his opponent from his feet to his stomach or side such that his back or shoulders are not exposed to the mat.
- **Reversal (1 point):** A wrestler is awarded one point for a reversal when the wrestler gains control over his opponent from a defensive position (when the wrestler is being controlled by his opponent).

- **Exposure** also called the **Danger Position (2 or 3 points):** A wrestler is awarded points for exposure when the wrestler exposes his opponent's back to the mat for several seconds. Points for exposure are also awarded if a wrestler's back is to the mat but the wrestler is not pinned. Criteria for exposure or the danger position is met when 1) a wrestler's opponent is in a bridge position to avoid being pinned, 2) a wrestler's opponent is on one or both elbows with his back to the mat and avoids getting pinned, 3) a wrestler holds one of his opponent's shoulders to the mat and the other shoulder at an acute angle (less than 90 degrees), 4) a wrestler's opponent is in an "instantaneous fall" position (where both of his shoulders are on the mat for less than one second), or 5) the wrestler's opponent rolls on his shoulders. A wrestler in the danger position allows his opponent to score two points. An additional **hold-down point** may be earned by maintaining the exposure continuously for five seconds.

- **Penalty (1 or 2 points):** Under the 2004–2005 changes to the international styles, a wrestler whose opponent takes an injury time-out receives one point unless the injured wrestler is bleeding. Other infractions (e.g. fleeing a hold or the mat, striking the opponent, acting with brutality or intent to injure, using illegal holds, etc.) are penalized by an award of either one or two points, a **Caution**, and a choice of position to the opponent.

- **Out-of-Bounds (1 point):** Whenever a wrestler places his foot in the protection area, the match is stopped, and one point is awarded to his opponent.

Classification points are also awarded in an international wrestling tournament, which give most points to the winner and in some cases, one point to the loser depending on the outcome of the match and how the victory was attained. For example, a victory by fall would give the winner five classification points and the loser no points, while a match won by technical superiority with the loser scoring technical points would award three points to the winner and one point to loser.

The full determinations for scoring are found on pages 34 to 40 of the FILA International Wrestling Rules.
Victory conditions

A match can be won in the following ways:

- **Win by Fall:** The object of the entire wrestling match is to attain victory by what is known as the fall. A fall, also known as a pin, occurs when one wrestler holds both of his opponents' shoulders on the mat simultaneously. In Greco-Roman and freestyle wrestling, the two shoulders of the defensive wrestler must be held long enough for the referee to "observe the total control of the fall" (usually ranging from one half-second to about one or two seconds). Then either the judge or the mat chairman concurs with the referee that a fall is made. (If the referee does not indicate a fall, and the fall is valid, the judge and the mat chairman can concur together and announce the fall.) A fall ends the match entirely regardless of when it occurs. In the United States, for the Kids freestyle and Greco-Roman wrestling division (wrestlers ages 8 to 14) in competitions sponsored by USA Wrestling, it is specified that a fall must be held for two seconds.

- **Win by Technical Superiority** (Also called **Technical Fall**): If a fall is not secured to end the match, a wrestler can win a period simply by points. If one wrestler gains a six-point lead over his opponent at any time in the period, scores a five point throw (a throw where the person's feet go directly above his head, also called a throw of grand amplitude), or scores two three point takedowns (taking an opponent from his feet to his back or sides so that there is shoulder exposure), the current period is declared over and he is declared the winner of that period by technical superiority. If a wrestler wins two out of three periods in this way, he is then the winner of the match by technical superiority.

- **Win by Decision:** If neither wrestler achieves either a fall or technical superiority, the wrestler who scored more points during the period is declared the winner of that period. If the score is tied at 1-1 at the end of both standing and ground phases, the winner is determined by certain criteria. First, the number of cautions given to each wrestler for penalties; next, the value of points gained (that is, whether a wrestler gained points based on a one-, two-, or three-point move); and finally, the last scored technical point are taken into account to determine the winner of the period. Generally, the wrestler who scored the last technical point will be awarded the period.
• **Win by Default**: If one wrestler is unable to continue participating for any reason or fails to show up on the mat after his name was called three times before the match begins, his opponent is declared the winner of the match by default, forfeit, or withdrawal.

• **Win by Injury**: If one wrestler is injured and unable to continue, the other wrestler is declared the winner. This is also referred to as a medical forfeit or injury default. The term also encompasses situations where wrestlers become ill, take too many injury time-outs, or bleed uncontrollably. If a wrestler is injured by his opponent's illegal maneuver and cannot continue, the wrestler at fault is disqualified.

• **Win by Disqualification**: Normally, if a wrestler is assessed three Caution,s for breaking the rules, he is disqualified. Under other circumstances, such as flagrant brutality, the match may be ended immediately and the wrestler disqualified and removed from the tournament.

**Team scoring in tournaments**

In an international wrestling tournament, teams enter one wrestler at each weight class and score points based on the individual performances. For example, if a wrestler at the 60 kg weight class finishes in first place, then his team will receive 10 points. If he were to finish in tenth place, then the team would only receive one. At the end of the tournament, each team's score is tallied, and the teams are then placed first, second, third, etc.

**Team competition**

A team competition or dual meet is a meeting between (typically two) teams in which individual wrestlers at a given weight class compete against each other. A team receives one point for each victory in a weight class regardless of the outcome. The team that scores the most points at the end of the matches wins the team competition. If there are two sets of competitions with one team winning the home competition and one winning the away competition, a third competition may take place to determine the winner for ranking purposes, or the ranking may take place by assessing in order: 1) the most victories by adding the points of the two matches; 2) the most points by fall, default, forfeit, or disqualification; 3) the most matches won by technical superiority; 4) the most periods won by technical superiority; 5) the most technical points won in
all the competition; 6) the least technical points won in all the competition. This works similarly when more than two teams are involved in this predicament.

**Freestyle wrestling**

Freestyle wrestling is a style of amateur wrestling that is practiced throughout the world. Along with Greco-Roman, it is one of the two styles of wrestling contested in the Olympic games. It is, along with track and field, one of the oldest organized sports in history. American high school and college wrestling is conducted under different rules and is termed scholastic and collegiate wrestling.

Freestyle wrestling, like its American counterpart, collegiate wrestling, has its greatest origins in catch-as-catch-can wrestling and, in both styles, the ultimate goal is to pin your opponent to the mat, which results in an immediate win. Freestyle and collegiate wrestling, unlike Greco-Roman, also both allow the use of the wrestler's or his opponent's legs in offense and defense.

According to the International Federation of Associated Wrestling Styles (FILA), freestyle wrestling is one of the four main forms of amateur competitive wrestling that are practiced internationally today.

**Wrestling**

Freestyle wrestling, according to FILA, is said to have originated in Great Britain and the United States by the name of "catch-as-catch-can" wrestling. "Catch-as-catch-can" wrestling had a particular following in Great Britain and the variant developed in Lancashire had a particular effect on freestyle wrestling. "Catch-as-catch-can" wrestling gained great popularity in fairs and festivals during the 19th century. In catch-as-catch-can wrestling, both contestants started out standing and then a wrestler sought to hold his opponent's shoulder to the ground (known as a fall). If no fall was scored, both wrestlers continued grappling on the ground, and almost all holds and techniques were allowable. A Scottish variant of Lancashire wrestling also became popular which began with both wrestlers standing chest to chest, grasping each other with locked arms around the body and, if no fall was made, with the match continuing on the ground. Also, there was the Irish collar-and-elbow style, where wrestlers started out on their feet with both
wrestlers grasping each other by the collar with one hand and by the elbow with the other. If neither wrestler then achieved a fall, the contestants would continue both standing and on the ground until a fall was made. Irish immigrants later brought this style of wrestling to the United States, where it soon became widespread, especially because of the success of the wrestling champion of the Army of the Potomac, George William Flagg from Vermont. Catch-as-catch can was the style performed by at least a half dozen U.S. presidents, including George Washington, Zachary Taylor, Abraham Lincoln, Andrew Johnson, Ulysses S. Grant, and Theodore Roosevelt.

Because of the widespread interest in and esteem of professional Greco-Roman wrestling and its popularity in many international meets in nineteenth century Europe, freestyle wrestling (and wrestling as an amateur sport in general) had a tough time gaining ground on the continent. The 1896 Olympic Games had only one wrestling bout, a heavyweight Greco-Roman match. Freestyle wrestling first emerged as an Olympic sport in the Saint Louis Olympics of 1904. All 40 wrestlers who participated in the 1904 Olympics were American. The 1904 Olympics sanctioned the rules commonly used for catch-as-catch can, but imposed some restrictions on dangerous holds. Wrestling by seven weight classes: 47.6 kg (104.9 lb), 52.2 kg (115.1 lb), 56.7 kg (125.0 lb), 61.2 kg (134.9 lb), 65.3 kg (143.9 lb), 71.7 kg (156.7 lb), and greater than 71.7 kg (158 lb) was an important innovation in the Summer Olympics.

Since 1921, the International Federation of Associated Wrestling Styles (FILA), which has its headquarters near Lausanne, Switzerland, has set the "Rules of the Game", with regulations for scoring and procedures that govern tournaments such as the World Games and the competition at the Summer Olympics. These were later adopted by the Amateur Athletic Union (AAU) for its freestyle matches. Freestyle wrestling gained great popularity in the United States after the Civil War. By the 1880s, tournaments drew hundreds of wrestlers. The rise of cities, increased industrialization, and the closing of the frontier provided the affable environment for amateur wrestling, along with boxing, to increase in esteem and popularity. Amateur wrestling teams soon emerged, such as the wrestling team of the New York Athletic Club, which had its first tournament in 1878. Professional wrestling also developed (which was not like today's "sports-entertainment" seen today), and by the 1870s, professional championship matches offered allowances of up to $1,000.
Nineteenth century wrestling matches were particularly long, and especially Greco-Roman bouts (where holds below the waist and the use of the legs are not allowed) could last as many as eight to nine hours, and even then, it was only decided by a draw. In the 20th century, time limits were set for matches. For more than forty years into the twentieth century, freestyle and its American counterpart, collegiate wrestling, did not have a scoring system that decided matches in the absence of a fall. The introduction of a point system by Oklahoma State University wrestling coach Art Griffith that gained acceptance in 1941 influenced the international styles as well. By the 1960s international wrestling matches in Greco-Roman and freestyle were scored by a panel of three judges in secret, who made the final decision by raising colored paddles at the match's end. Dr. Albert de Ferrari from San Francisco who became vice president of FILA, lobbied for a visible scoring system and a rule for "controlled fall", which would recognize a fall only when the offensive wrestler had done something to cause it. These were soon adopted internationally in Greco-Roman and freestyle. By 1996, before a major overhaul of FILA rules, an international freestyle match consisted of two three-minute periods, with a one minute rest between periods. Today, wrestlers from Russia and Japan have had the strongest showings. Alexander Medved of Russia won 10 world championships and three Olympic gold medals, in the period of 1964-1972. Many collegiate wrestlers have moved on to freestyle competition, particularly internationally with great success.

Weight Classes

Currently, international men's freestyle wrestling is divided into four main age categories: schoolboys, cadets, juniors, and seniors. Schoolboys (young men ages 14–15; or age 13 with a medical certificate and parental authorization) wrestle in 10 weight classes ranging from 29–85 kg (64–190 lb). Cadets (young men ages 16–17; or age 15 with a medical certificate and parental authorization) wrestle in 10 weight classes ranging from 39 to 100 kg (86 to 220 lb). Juniors (young men ages 18 to 20; or age 17 with a medical certificate and parental authorization) wrestle in eight weight classes ranging from 46–120 kg (100–260 lb). Seniors (men ages 20 and up) wrestle in seven weight classes ranging from 50 to 120 kg (110 to 260 lb). For men, there is also a special category for some freestyle competitions, "Veterans", for men ages 35 and older, presumably featuring the same weight classes as seniors. Also, all of the men's age categories and weight classes can be applied to Greco-Roman wrestling.
Women currently compete in freestyle wrestling in one of four age categories on an international level: schoolgirls, cadets, juniors, and seniors. Schoolgirls (young women ages 14–15; or age 13 with a medical certificate and parental authorization) wrestle in 10 weight classes ranging from 28–62 kg (62–140 lb). Cadets (young women ages 16–17; or age 15 with a medical certificate and parental authorization) wrestle in 10 weight classes ranging from 36–70 kg (79–150 lb). Juniors (young women ages 18 to 20; or age 17 with a medical certificate and parental authorization) wrestle in eight weight classes ranging from 40–72 kg (88–160 lb). Seniors (women ages 20 and up) wrestle in seven weight classes ranging from 44–72 kg (97–160 lb). Wrestlers after weigh-in may only wrestle in their own weight class. Wrestlers in the senior age category may wrestle up a weight class except for the heavyweight division (which starts at a weight more than 96 kg (210 lb) for the men and more than 67 kg (150 lb) for the women). Different nations may have different weight classes and different age categories for their levels of freestyle competition.

**Structure of the Tournament**

A typical international wrestling tournament takes place by direct elimination with an ideal number of wrestlers (4, 8, 16, 32, 64, etc.) in each weight class and age category competing for placement. The competition in each weight class takes place in one day. The day before the wrestling in a scheduled weight class and age category takes place, all the applicable wrestlers are examined by a physician and weighed-in. Each wrestler after being weighed on the scale then draws a token randomly that gives a certain number.

If an ideal number is not reached to begin elimination rounds, a qualification round will take place to eliminate the excess number of wrestlers. For example, 22 wrestlers may weigh-in over the ideal number of 16 wrestlers. The six wrestlers who drew the highest numbers after 16 and the six wrestlers who drew the six numbers immediately before 17 would then wrestle in six matches in the qualification round. The winners of those matches would then go on to the elimination round.

In the elimination round, the ideal number of wrestlers then pair off and compete in matches until two victors emerge who will compete in the finals for first and second place. All of the
wrestlers who lost to the two finalists then have the chance to wrestle in a repechage round. The repechage round begins with the wrestlers who lost to the two finalists at the lowest level of competition in the elimination round. The matches are paired off by the wrestlers who lost to one finalist and the wrestlers who lost to the other. The two wrestlers who win after every level of competition are the victors of the repechage round.

In the finals, the two victors of the elimination round compete for first and second place.

In all rounds of the tournament, the wrestlers compete in matches paired off in the order of the numbers they drew after the weigh-in.

After the finals match, the awards ceremony will take place. The first place and second place wrestlers will receive a gold and silver medal, respectively. (At the FILA World Championships, the first place wrestler will receive the World Championship Belt.) The two repechage round winners will each be awarded third place with a bronze medal. The two wrestlers who lost in the finals for the third place are awarded fifth place. From seventh place down, the wrestlers are ranked according to the classification points earned for their victories or losses. If there is a tie among wrestlers for classification points, the ranking is determined in this order from the highest to the lowest:

- Most victories earned by fall
- Most matches won by technical superiority
- Most periods won by technical superiority
- Most points scored in the tournament
- Least points scored in the tournament

Wrestlers who remained tied after that will be awarded placements "ex aequo." Wrestlers classified from the fifth to the 10th place will receive a special diploma. The wrestling tournaments in the Olympic Games and the Senior and Junior World Championships are designed to take place over three days on three mats.
Layout of the Mat

The match takes place on a thick rubber mat that is shock-absorbing to ensure safety. For the Olympic Games, all World Championships, and World Cups, the mat has to be new. The main wrestling area has a nine meter diameter and is surrounded by a 1.5-metre (4.9 ft) border of the same thickness known as the protection area. Inside the nine meter in diameter circle is a red band of one meter (3 ft 3 in) in width that is on the outer edge of the circle and is known as the red zone. The red zone is used to help indicate passivity on the part of a wrestler; thus, it is also known as the passivity zone. Inside the red zone is the central wrestling area which is seven meters 7 metres (23 ft 0 in) in diameter. In the middle of the central surface of wrestling is the central circle, which is one meter in diameter. The central circle is surrounded by a band 10 centimeters (4 in) wide and is divided in half by a red line eight centimeters (3 1/8 in) in width. The diagonally opposite corners of the mat are marked with the wrestlers' colors, [[File:red]] and [[File:blue].

For competition in the Olympic Games, the World Championships, and the Continental Championships, the mat is installed on a platform no greater than 1.1 metres (3 ft 7 in) in height. If the mat lays on a podium and the protection margin (covering and free space around the mat) does not reach two meters (6 ft 6 in), the sides of the podium are covered with 45° (degree) inclined panels. In all cases, the color of the protection area is different from the color of the mat.

Equipment

- A singlet is a one-piece wrestling garment made of spandex that should provide a tight and comfortable fit for the wrestler. It is made from nylon or lycra and prevents an opponent from using anything on the wrestler as leverage. One wrestler usually competes in a red singlet and the other in a blue singlet.

- A special pair of shoes is worn by the wrestler to increase his mobility and flexibility. Wrestling shoes are light and flexible in order to provide maximum comfort and movement. Usually made with rubber soles, they help give the wrestler's feet a better grip on the mat.
- A handkerchief, also called a bloodrag is carried in the singlet. In the event of bleeding, the wrestler will remove the cloth from his singlet and attempt to stop the bleeding or clean up any bodily fluids that may have gotten onto the mat.

- Headgear, equipment worn around the ears to protect the wrestler, is optional in freestyle. Headgear is omitted at the participant's own risk, as there is the potential to develop cauliflower ear.

The Match

A match is a competition between two individual wrestlers of the same weight class. In freestyle wrestling, a jury (or team) of three officials (referees) is used. The referee controls the action in the center, blowing the whistle to start and stop the action, and supervises the scoring of holds and infractions. The judge sits at the side of the mat, keeps score, and occasionally gives his approval when needed by the referee for various decisions. The mat chairman sits at the scoring table, keeps time, is responsible for declaring technical superiority, and supervises the work of the referee and judge. To call a fall, two of the three officials must agree (usually, the referee and either the judge or the mat chairman).

Period Format

In Greco-Roman and freestyle, the format is now three two-minute periods. Before each match, each wrestler's name is called, and the wrestler takes his place at the corner of the mat assigned to his color. The referee then calls both of them to his side at the center of the mat, shakes hands with them, inspects their apparel, and checks for any perspiration, oily or greasy substances, and any other infractions. The two wrestlers then greet each other, shake hands, and the referee blows his whistle to start the period.

A wrestler wins the match when he has won two out of three periods. For example, if one competitor were to win the first period 1-0 and the second period 1-0, the match would be over. However, if the other competitor were to win the second period, then a third and deciding period would result. Only a fall, injury default, or disqualification terminates the match; all other modes of victory result only in period termination. One side effect of this format is that it is possible for
the losing wrestler to outscore the winner. For example, periods may be scored 3-2, 0-4, 1-0, leading to a total score of 4-6 but a win for the wrestler scoring fewer points.

In freestyle, if the score is tied at 0-0 at the end of a two-minute period, the two contestants then wrestle in an overtime period known as **The Clinch**, that lasts for a maximum of 30 seconds. The referee will toss a colored disk, with a red-colored side and a blue-colored side. The wrestler who won the colored disk toss will have the advantage in the clinch position. The wrestler who lost the colored disk toss then places one leg in the middle of the central circle and the other leg outside of the central circle. The wrestler who won the colored disk toss then signals to the referee which leg he will place in the middle of the central circle. After doing so, the wrestler who won then wraps both of his arms around the leg of his opponent that is in the central circle and then places his head on the outside of his opponent's thigh. The loser of the colored disk toss then places both of his hands on his opponent's shoulders. When the referee verifies that the clinch position is correct, the two contestants then wrestle. The first wrestler to score a point wins the period. If after 30 seconds, the wrestler who had the advantage in the clinch fails to score a point, his opponent would then receive a point and be declared the winner of the period.

When the period (or match) has concluded, the referee stands at the center of the mat facing the officials' table. Both wrestlers then come, shake hands, and stand on either side of the referee to await the decision. The referee then proclaims the winner by raising the winner's hand. At the end of the match, each wrestler then shakes hands with the referee and returns to shake hands with his opponent's coach.

**Match scoring**

In freestyle wrestling, as well as in Greco-Roman wrestling, points are awarded mostly on the basis of explosive action and risk. For example, when one wrestler performs a grand amplitude throw that brings his opponent into the danger position, he is awarded the greatest number of points that can be scored in one instance. Also, a wrestler who takes the risk to briefly roll on the mat (with his shoulders in contact with the mat) could give a certain number of points to his opponent. Scoring can be accomplished in the following ways:
• **Takedown (1 to 5 points):** A wrestler is awarded points for a takedown when the wrestler gains control over his opponent on the mat from a neutral position (when the wrestler is on his feet). At least three points of contact have to be controlled on the mat (e.g. two arms and one knee; two knees and one arm or the head; or two arms and the head).

(5 points): Five points are awarded for a takedown brought about by a throw of grand amplitude (a throw in which a wrestler brings his opponent off of the mat and controls him so that his feet go directly above his head) either from the standing or *par terre* position into a direct and immediate danger position.

(3 points): Generally, three points are awarded for a takedown brought about by a grand amplitude throw that does not bring his opponent in a direct and immediate danger position or for a takedown in which a wrestler's opponent is taken from his feet or his stomach to his back or side (a throw of short amplitude) so that he is in the danger position.

(1 point): One point is awarded for a takedown brought about by a wrestler taking his opponent from his feet to his stomach or side such that his back or shoulders are not exposed to the mat.

• **Reversal (1 point):** A wrestler is awarded one point for a reversal when the wrestler gains control over his opponent from a defensive position (when the wrestler is being controlled by his opponent).

• **Exposure also called the **Danger Position** (2 or 3 points):** A wrestler is awarded points for exposure when the wrestler exposes his opponent's back to the mat for several seconds. Points for exposure are also awarded if one's back is to the mat but the wrestler is not pinned. Criteria for exposure or the danger position is met when 1) a wrestler's opponent is in a bridge position to avoid being pinned, 2) a wrestler's opponent is on one or both elbows with his back to the mat and avoids getting pinned, 3) a wrestler holds one of his opponent's shoulders to the mat and the other shoulder at an acute angle (less than 90 degrees), 4) a wrestler's opponent is in an "instantaneous fall" position (where both of his shoulders are on the mat for less than one second), or 5) the wrestler's opponent rolls
on his shoulders. A wrestler in the danger position allows his opponent to score two points. An additional **hold-down point** may be earned by maintaining the exposure continuously for five seconds.

- **Penalty (1 or 2 points)**: Under the 2004-2005 changes to the international styles, a wrestler whose opponent takes an injury time-out receives one point unless the injured wrestler is bleeding. Other infractions (e.g. fleeing a hold or the mat, striking the opponent, acting with brutality or intent to injure, using illegal holds, etc.) are penalized by an award of either one or two points, a **Caution**, and a choice of position to the opponent.

- **Out-of-Bounds (1 point)**: Whenever a wrestler places his foot in the protection area, the match is stopped, and one point is awarded to his opponent.

Classification points are also awarded in an international wrestling tournament, which give most points to the winner and in some cases, one point to the loser depending on the outcome of the match and how the victory was attained. For example, a victory by fall would give the winner five classification points and the loser no points, while a match won by technical superiority with the loser scoring technical points would award three points to the winner and one point to loser.

**Victory Conditions in Freestyle wrestling**

A match can be won in the following ways:

- **Win by Fall**: The object of the entire wrestling match is to attain victory by what is known as the fall. A **fall**, also known as a pin, occurs when one wrestler holds both of his opponents' shoulders on the mat simultaneously. In Greco-Roman and freestyle wrestling, the two shoulders of the defensive wrestler must be held long enough for the referee to "observe the total control of the fall" (usually ranging from one half-second to about one or two seconds). Then either the judge or the mat chairman concurs with the referee that a fall is made. (If the referee does not indicate a fall, and the fall is valid, the judge and the mat chairman can concur together and announce the fall.) A fall ends the match entirely regardless of when it occurs.
• **Win by Technical Superiority** (Also called **Technical Fall**): If a fall is not secured to end the match, a wrestler can win a period simply by points. If one wrestler gains a six-point lead over his opponent at any time in the period, scores a five point throw (a throw where the person's feet go directly above his head, also called a throw of grand amplitude), or scores two three point takedowns (taking an opponent from his feet to their back or sides so that there is shoulder exposure), the current period is declared over and he is declared the winner of that period by technical superiority. If a wrestler wins two out of three periods in this way, he is then the winner of the match by technical superiority.

• **Win by Decision**: If neither wrestler achieves either a fall or technical superiority, the wrestler who scored more points during the period is declared the winner of that period. If the score is tied by points at the end of a period, the winner is determined by certain criteria. First, the number of cautions given to each wrestler for penalties; next, the value of points gained (that is, whether a wrestler gained points based on a one-, two-, or three-point move); and finally, the last scored technical point are taken into account to determine the winner of the period. Generally, the wrestler who scored the last technical point would be awarded the period. If the score is tied at zero at the end of a period, the wrestlers go through a 30-second overtime procedure known as **The Clinch** in which the wrestlers are required to enter the clinch position and wrestle until a point is scored, or until one of the wrestlers breaks the clinch.

• **Win by Default**: If one wrestler is unable to continue participating for any reason or fails to show up on the mat after his name was called three times before the match begins, his opponent is declared the winner of the match by **default**, **forfeit**, or **withdrawal**.

• **Win by Injury**: If one wrestler is injured and unable to continue, the other wrestler is declared the winner. This is also referred to as a **medical forfeit** or **injury default**. The term also encompasses situations where wrestlers become ill, take too many injury time-outs, or bleed uncontrollably. If a wrestler is injured by his opponent's illegal maneuver and cannot continue, the wrestler at fault is disqualified.

• **Win by Disqualification**: Normally, if a wrestler is assessed three **Cautions** for breaking the rules, he is disqualified. Under other circumstances, such as flagrant brutality, the match may be ended immediately and the wrestler disqualified and removed from the tournament.
Team Scoring in Tournaments

In an international wrestling tournament, teams enter one wrestler at each weight class and score points based on the individual performances. For example, if a wrestler at the 60 kg weight class finishes in first place, then his team will receive 10 points. If he were to finish in tenth place, then the team would only receive one. At the end of the tournament, each team's score is tallied, and the team with the most points wins the team competition.

Team Competition

A team competition or dual meet is a meeting between (typically two) teams in which individual wrestlers at a given weight class compete against each other. A team receives one point for each victory in a weight class regardless of the outcome. The team that scores the most points at the end of the matches wins the team competition. If there are two sets of competitions with one team winning the home competition and one winning the away competition, a third competition may take place to determine the winner for ranking purposes, or the ranking may take place by assessing in order: 1) the most victories by adding the points of the two matches; 2) the most points by fall, default, forfeit, or disqualification; 3) the most matches won by technical superiority; 4) the most periods won by technical superiority; 5) the most technical points won in all the competition; 6) the least technical points won in all the competition. This works similarly when more than two teams are involved in this predicament.

Women's wrestling

Freestyle is the only style used for international competition in women's wrestling. The rules for women's freestyle wrestling, with some modifications, are largely the same as those for the men. The period lengths are the same, with a 30-second break between two periods. Women wear a special singlet, so that they will not simply have to wear a male's singlet with a T-shirt underneath. Some small United States college wrestling clubs have women wrestle freestyle against Canadian universities mostly because of the limited number of wrestling programs in the United States. Most of the U.S. athletic organizations such as the NCAA do not sponsor women's
wrestling, while the Canadian Interuniversity Sport association does. (The National Collegiate Wrestling Association sponsors a women's division, in which competition largely based on collegiate wrestling rules.) Women's wrestling made its Olympic debut at the 2004 Olympic Games in Athens, Greece.

**Submission wrestling**

Submission wrestling is a wrestling style that consists of controlling the opponent without using striking and also includes the use of submission holds, it is also be referred to as grappling or “submission grappling.” It starts from a standing position or on the ground after a throw, and the goal is to make the opponent submit via the use of immobilization techniques such as locks. Grappling, differing from the FILA definition, plays an important role in the practice of Mixed Martial Arts (MMA) and can be used as a self-defence technique. It brings together techniques from Brazilian jiu-jitsu, Freestyle Wrestling, Folk American Wrestling (catch-as-catch-can), sambo and judo. Grapplers wear shorts and a tight shirt (No-Gi) or kimonos (Gi).

**Combat Grappling**

Combat grappling is a form of safe amateur Mixed Martial Arts (MMA) that incorporates techniques from most existing Martial Arts systems, creating a unique fighting environment that alternatively takes the fight from standing to ground positions. Combat grappling matches are either won by grappling holds such as joint locks and chokes, or by striking and kicking techniques. Combat grappling also intends to be a realistic form of self-defense covering all aspects of standing and ground fighting, thus making it perfect and safe to use for military, police, and security training.

**Beach wrestling**

Apparently in a bid to give wrestling greater appeal to television audiences, FILA adopted beach wrestling as an official discipline during 2004–2005. Beach wrestling is standing wrestling done by wrestlers, male or female, inside a sand-filled circle measuring 6 meters (20 ft) in diameter with only two weight categories, heavy and light. The objective is to throw an opponent or take
the opponent to their back. The wrestlers wear swimsuits rather than special wrestling uniforms. Wrestlers may also wear spandex or athletic shorts.

**Sambo**

Sambo is a martial art that originated in the Soviet Union (particularly Russia) in the 20th century. It is an acronym for "self-defence without weapons" in Russian and had its origins in the Soviet armed forces. Its influences are varied, with techniques borrowed from sports ranging from the two international styles of Greco-Roman and freestyle to judo, jujutsu, European styles of folk wrestling, and even fencing. The rules for sport sambo are similar to those allowed in competitive judo, with a variety of leglocks and defense holds from the various national wrestling styles in the Soviet Union, while not allowing chokeholds.

**Folk style disciplines**

Folk wrestling describes a traditional form of wrestling unique to a culture or geographic region of the world that FILA does not administer rules for. Examples of the many styles of folk wrestling, include Backhold Wrestling (from Europe), Catch-as-catch-can (from England), Kurash from Uzbekistan, Gushteengiri from Tajikistan, Khuresh from Siberia, Lotta Campidanese from Italy, Pahlavani from Iran, Pehlwani from India, Penjang Gulat from Indonesia, Schwingen from Switzerland, Shuai jiao from China, Ssireum from Korea, and Yağlı güreş (Turkish oil wrestling).

**Collegiate wrestling**

Collegiate wrestling, sometimes known in the United States as Folkstyle wrestling, is a style of amateur wrestling practiced at the collegiate and university level in the United States. Collegiate wrestling emerged from the folk wrestling styles practiced in the early history of the United States. This style, with some slight modifications, is also practiced at the high school and middle school levels, and also among younger participants, where it is known as scholastic wrestling. These names help distinguish collegiate wrestling from other styles of wrestling that are
practiced around the world such as those in the Olympic Games: Freestyle wrestling and Greco-Roman wrestling.

Collegiate wrestling, like its international counterpart, freestyle wrestling, has its greatest origins in catch-as-catch-can wrestling. In both styles, the ultimate goal is to pin the opponent to the mat, which results in an immediate win. Collegiate and freestyle wrestling, unlike Greco-Roman, also both allow the use of the wrestler's or his opponent's legs in offense and defense. Yet, collegiate wrestling has had so many influences from the wide variety of folk wrestling styles brought into the country that it has become distinctly American.

**Contrast with the International Styles**

In collegiate wrestling, great emphasis is placed on one wrestler's control of the opponent on the mat, usually by controlling the opponent's legs or torso. When a wrestler gains control and maintains restraining power over an opponent, as seen here, he is said to be in the position of advantage.

Throws can be performed in collegiate wrestling, but there is not as much emphasis placed on them as in the international styles.

Collegiate wrestling differs in a number of ways from freestyle and Greco-Roman. Some of the differences are listed below.

- There are some scoring differences. For example, in collegiate wrestling, "exposure" points are not given to a wrestler for simply forcing the opponent's shoulders to quickly rotate and be exposed to the mat. Instead, for example, a wrestler must control one of the opponent's shoulders on the mat and have the opponent's other shoulder forced to the mat at an angle of 45 degrees or less for two to five seconds to score. The points generated in this situation are called "near fall" points. This shows a difference in focus: while the international styles encourage explosive action and risk, collegiate wrestling encourages and rewards control over the opponent.
This emphasis on control was present in collegiate wrestling from its earliest days. Since 1915, collegiate wrestling officials have recorded the time that each participant had in controlling his opponent on the mat (known as "time advantage" or "riding time"). Early on, this was the major way to determine the winner in the absence of a fall. Over time, the significance of such timekeeping has declined, and now such "time advantage" only counts for one point in college competition at the most. As in both of the international styles, a wrestler can win the match by pinning both of his opponent's shoulders or both of his opponent's scapulae (shoulder blades) to the mat.

- In collegiate wrestling, there is an additional position to commence wrestling after the first period, and also to resume wrestling after various other situations. All three styles begin a match with both wrestlers facing each other on their feet with the opportunity given to both to score a takedown and thus gain control over the opponent. In collegiate wrestling, once a takedown is scored, the wrestler under control in the inferior (defensive or bottom) position remains there until he escapes the move, until he reverses the position, until the period ends, or until various penalty situations occur. The inferior position is similar to a choice for a starting position in the second and third periods, known as the referee's position. The referee's position is roughly analogous to the "par terre" starting position in the international wrestling styles. In the international styles, the "par terre" starting position is not utilized as often as the referee's position is in collegiate wrestling. In the two international styles, the inferior position in the "par terre" starting position is now used to penalize a wrestler who has committed an illegal act.

- In collegiate wrestling, there is a de-emphasis on "throws", or maneuvers where the other wrestler is taken off his feet, taken through the air, and lands on his back or shoulders. This lack of emphasis on throws is another example of how collegiate wrestling emphasizes dominance or control, as opposed to the element of risk and explosive action. A legal throw in collegiate wrestling is awarded the same amount of points as any other takedown. In freestyle and Greco-Roman wrestling, points awarded for a wrestler's takedowns increase with the level of explosiveness seen in the throws. Well-executed throws can even win a period in the international styles, especially when a throw is of grand amplitude (a throw in which a wrestler takes an opponent off of the mat and
controls his opponent so that his feet go directly above his head). In collegiate wrestling, some of the throws seen in the international styles may even be illegal, such as a full-back suplay from a rear standing position. However, many collegiate wrestlers still incorporate some throws into their repertoire of moves because a thrown opponent often lands on his back or shoulders and thus in a position more conducive to producing near fall points or securing a fall.

Generally, rather than lifting the opponent or throwing him for grand amplitude in order to win the period as in the international styles, the collegiate wrestler most often seeks to take his opponent down to the mat and perform a "breakdown" (that is, to get his opponent in the defensive position flat on his stomach or side). With the opponent off of his base of support (that is, off of his hands and knees), the collegiate wrestler in the offensive position would then seek to run pinning combinations, or combinations of techniques designed to secure a fall. Failing to gain a fall could still result in an advantage in riding time and potential nearfall points. The defensive wrestler could counter such attempts for a takedown, or when once taken down try to escape his opponent's control or reverse control altogether. In a last ditch attempt to foil a fall, the defensive wrestler could also "bridge" out of his opponent's control (that is, pry his head, his back, and both of his feet up from the mat and then turn toward his stomach). Overall, a collegiate wrestler in his techniques would most likely emphasize physical control and dominance over the opponent on the mat.

**History**

**American Wrestling in the Early Colonial Era**

There were already wrestling styles among Native Americans varying from tribe and nation by the 15th and 16th centuries, when the first Europeans settled. The English and French who settled on the North American continent sought out wrestling as a popular pastime. Soon, there were local champions in every settlement, with contests between them on a regional level. The colonists in what would become the United States started out with something more akin to Greco-Roman wrestling, but soon found that style too restrictive in favor of a style which a greater allowance of holds.
The Irish were known for their "collar-and-elbow" style, in which wrestlers at the start of the match would grasp each other by the collar with one hand and by the elbow with the other. From this position, wrestlers sought to achieve a fall. If no fall occurred, the wrestlers would continue grappling both standing on their feet and on the ground until a fall was made. Irish immigrants later brought this style to the United States where it soon became widespread. There was also what became known as "catch-as-catch-can" wrestling, which had a particular following in Great Britain and the variant developed in Lancashire had a particular effect on future freestyle wrestling in particular.

**Wrestling in the 18th and 19th century United States**

By the 18th century, wrestling soon became recognized as a legitimate spectator sport, despite its roughness. Among those who were well known for their wrestling techniques were several U.S. Presidents. Since "catch-as-catch-can" wrestling was very similar, it gained great popularity in fairs and festivals in the United States during the 19th century. The collar-and-elbow style was also refined by later Irish immigrants, and gained great ground because of the success of George William Flagg from Vermont, the wrestling champion of the Army of the Potomac. After the Civil War, freestyle wrestling began to emerge as a distinct sport, and soon spread rapidly in the United States. Professional wrestling also emerged in the late 19th century (not like the "sports-entertainment" seen today). By the 1880s, American wrestling became organized, with matches often being conducted alongside gymnastic meets and boxing tournaments in athletic clubs. The growth of cities, industrialization, and the closing of the frontier provided the necessary avenue for sports such as wrestling to increase in popularity.

**The 20th Century: American Wrestling becomes "Collegiate"**

In 1903, the first intercollegiate dual meet took place between Yale University and Columbia University. The Eastern Intercollegiate Wrestling Association held its first tournament in 1905, which soon sparked many more wrestling tournaments for both college and university students and high school students. Edward Clark Gallagher, a football and track and field athlete at Oklahoma A&M College (now Oklahoma State University), launched wrestling as an official varsity sport just before World War I and with his team launched a dynasty, with undefeated
matches from 1921-1931. In 1927, Dr. Raymond G. Clapp published the rules for collegiate wrestling, and the next year, the first NCAA Wrestling Team Championship took place on March 30 to March 31 on the campus of Iowa State College. The rules of collegiate wrestling marked a sharp contrast to the freestyle wrestling rules of the International Amateur Wrestling Federation (IAWF) and the AAU. From then on, collegiate wrestling emerged as a distinctly American sport. College and high school wrestling grew especially after the standardization of the NCAA wrestling rules, which applied early on to both collegiate and scholastic wrestling (with high school modifications). More colleges, universities, and junior colleges began offering dual meets and tournaments, including championships and having organized wrestling seasons. There were breaks in wrestling seasons because of World War I and World War II, but in the high schools especially, state association wrestling championships sprung up in different regions throughout the 1930s and 1940s. As amateur wrestling grew after World War II, various collegiate athletic conferences also increased the number and quality of their wrestling competition, with more wrestlers making the progression of wrestling in high school, being recruited by college coaches, and then entering collegiate competition.

For most of the 20th century, collegiate wrestling was the most popular form of amateur wrestling in the country, especially in the Midwest and the Southwest. The 1960s and 1970s saw major developments in collegiate wrestling, with the emergence of the United States Wrestling Federation (USWF) (now known as USA Wrestling (USAW)). The USWF, with its membership of coaches, educators, and officials, became recognized eventually as the official governing body of American wrestling and as the official representative to the United States Olympic Committee, in place of the Amateur Athletic Union.

Today, on the collegiate level, several universities are known for regularly having competitive wrestling teams. The Iowa Hawkeyes (University of Iowa) wrestling team, the Oklahoma State Cowboys (Oklahoma State University) wrestling team, the Iowa State Cyclones (Iowa State University) wrestling team, and the Oklahoma Sooners (University of Oklahoma) wrestling team are four of the most storied and honored programs in the country and have won the majority of NCAA wrestling team championships. Collegiate wrestling teams compete for the NCAA Wrestling Team Championship each year in each of the three divisions. The NCAA awards individual championships in the 10 weight classes, as well as a team title.
Weight Classes

The National Collegiate Athletic Association (NCAA) is the organization that regulates collegiate wrestling. The wrestling rules developed by the NCAA are followed by each of the NCAA's three divisions. In addition, the National Association of Intercollegiate Athletics (NAIA), the National Junior College Athletic Association (NJCAA), and the National Collegiate Wrestling Association (NCWA) have also adopted them, with some modifications. The NCAA generally sets the standard for weight classes for college-level dual meets, multiple duals, and tournaments. There are currently 10 main weight classes currently open to college-level competition, ranging from 125 lb to the Heavyweight division that ranges from 183 lb to 285 lb. Also, there is a 235 lb weight class, which only the National Collegiate Wrestling Association, the organization that governs college wrestling for institutions outside of the NCAA, NAIA, and NJCAA, currently allows that ranges from 174 lb to 235 lb. The National Collegiate Wrestling Association also allows eight weight classes for women ranging from 105 lb to 200 lb. A wrestler must normally have his weight assessed by a member of the institution's athletics medical staff (e.g. a physician, certified athletic trainer, or registered dietician) before the first official team practice. The weight assessed is then his minimum weight class. The athletics medical staff member and the head coach then review all of the assessed weights of the wrestling team members and certify them online at the website of the National Wrestling Coaches Association (NWCA). After the certification, the wrestler may not compete below that weight class and may only compete at one weight class higher than his minimum weight. If a wrestler does gain weight over his certified weight class and wrestles at two weight classes above it, he forfeits his previous lowest weight class for the one weight class below where he wrestled. If a contestant wishes to weigh-in and wrestle at only one weight class above his certified weight class and later return to his lowest certified weight class, he may do so. However, the wrestler may only return to that certified weight class according to the weight-loss plan of the National Wrestling Coaches Association. This weight loss plan takes into account potential dehydration during the wrestling season and minimum amounts of body fat. All of this has been done in order to protect the wrestler's health and safety.
Structure of the Season - Dual Meets and Tournaments

The collegiate wrestling season customarily runs from October or November to March. Regular season competition begins in late October or early November and continues until February. Post-season competition usually continues from February to March (depending on, if individual wrestlers or teams qualify for a conference, regional, or national championship). Normally, wrestling teams from two different colleges or universities would compete in what is known as a dual meet. It is possible for there also to be a multiple dual, where more than two wrestling teams compete against each other at the same event on the same day. For example, one college wrestling team may face another wrestling team for the first dual, and then a third wrestling team for the second dual. Also, those two wrestling teams may compete against each other in a dual meet as well. Colleges and universities often compete within their particular athletic conference; though competition outside of a team's conference or even outside of its division within the NCAA is not uncommon.

Dual Meets

Dual meets usually take place on evenings during the school week (Monday through Friday); on Saturday mornings, afternoons, or evenings; or even on Sunday mornings or afternoons during the wrestling season and begin with weigh-ins at a maximum of one hour before the meet begins. No weight allowances are made for dual meets and multiple-day dual meets. Wrestlers are also examined by a physician or a certified athletic trainer for any communicable skin diseases. If a student-wrestler does not make weight, he is ineligible for that weight class and a forfeit is scored. If there are any communicable skin diseases, it is a ground for disqualification. The wrestler's coach or athletic trainer can provide written documentation from a physician that a skin infection of a wrestler would not be communicable. The final judgment for whether a wrestler would be allowed to compete lies with the meet physician or athletic trainer on site. In all cases, after determining the sequence of weight classes for the dual meet, the referee will call the wrestlers from each team who have been designated as captains. One of the visiting captains will call a disk toss. The colored disk will then fall to the floor and determine: 1) which team has the choice of position at the start of the second period and 2) which one of the team's members is to appear first on the mat when called by the referee for each weight class. The wrestler-captain
who won the disk toss may choose the even or odd weight classes. That is, he may choose the weight classes, from lowest to highest, that are numbered evenly or oddly. For example, the 125 lb, 141 lb, 157 lb, etc. weight classes would be odd, and the 133 lb, 149 lb, 165 lb, etc. weight classes would be even. This order would work in the traditional sequence until the last even weight class of 285 lb.

During a dual meet, the top varsity wrestlers usually compete against each other. There can also be junior varsity matches, such as in Iowa, which are rare, that would take place immediately before the varsity matches. Also, before both varsity (and junior varsity) competition, there can also be an **exhibition match** in one or more weight classes. The exhibition matches do not count towards the varsity (or junior varsity) team score, but such matches allow wrestlers, especially at the freshmen level, to gain more competitive experience. Wrestling matches usually proceed in each of the 10 weight classes. The order the matches occur in is determined after the weigh-ins either by a mutual decision of the coaches or by a random draw choosing a particular weight class to be featured first. In either case, the succeeding wrestling matches will follow in sequence. For example, if the 157 lb weight class competes first, the succeeding wrestling matches will follow until the heavyweight class. Then, beginning at 125 lb, the rest of the matches will follow until the 149 lb match.

**Tournaments**

Often, many colleges and universities in the United States will compete with their teams in what is known as a **tournament**. In the tournament, from eight, 16, 32, 64, or more individual wrestlers can compete in each bracket. This allows many schools to establish their rankings, not only for individual student-wrestlers, but also for college and university wrestling teams as a whole (e.g. a conference or regional championship, or the NCAA Wrestling Team Championship). A tournament committee usually administers the event and after individual and team entries have been verified, the officials then determine the order of the matches (called "drawing") by certain brackets (e.g. brackets of eight, 16, etc.). The tournament officials when doing this drawing take into account each wrestler's win-loss record, previous tournament placements, and other factors that indicate the wrestler's ability. With that in mind, wrestlers who are noticed as having the most superior records are bracketed so that two top-ranked superior
wrestlers in each weight class do not compete against each other in an early round. This is called **seeding**. Tournaments are often sponsored by a college or university and are usually held on Friday, Saturday, Sunday, or over any of two days within the weekend. Admission is often charged to cover costs and make a small profit for the host. A tournament begins with weigh-ins starting two hours or less before competition begins on the first day or one hour or less before competitions begins on any subsequent day. An allowance of one pound is granted for each subsequent day of the tournament.

With the drawing and weigh-ins completed, wrestlers then compete in two brackets in each of the 10 weight classes. If there are not enough wrestlers to fill up the bracket in a weight class, a **bye** will be awarded to a wrestler who does not have to compete against another wrestler in his pairing. After taking account the number of byes, the first round in each weight class then begins. Most college wrestling tournaments are in double elimination format. The last two wrestlers in the upper (championship) bracket wrestle for first place in the finals, with the loser winning second place. In other words, a wrestler cannot place higher than third if he is knocked down to the lower (wrestle-back) bracket by losing in the championship semifinals. This is largely the result of time constraints: one-day tournaments often last into the evening. If the winner of the wrestle-back bracket were allowed to challenge the winner of the championship bracket in the championship, the tournament could continue well past midnight before finishing.

After the first match of the round of 16 in a championship bracket in each weight class, the wrestle-back rounds would then commence, beginning among all of the wrestlers who lost to the winners of the round of 16. The winner of the wrestle-back finals would then win third place, with the loser winning fourth place. In tournaments where six places are awarded, the losers of the wrestle-back semifinals would wrestle for fifth place, with the loser winning sixth place. If eight places are awarded, the losers of the wrestle-back quarterfinals would wrestle for seventh place, with the loser winning eighth place, and so on. After the championships finals, the awards ceremony usually takes place with plaques, medals, trophies, or other awards given to the individual and team winners with the highest placements. Precise rules for tournaments may vary from one event to the next.
Each intercollegiate athletic conference or geographic area features two or three "elite" tournaments every year. These events are by invitation only. Hence, the commonly-used name for them, **Invitations.** Tournament sponsors (which are usually colleges and universities, but sometimes other organizations) invite the best varsity wrestlers from their area to compete against each other. Many elite tournaments last two or even three days. For this reason, elite tournaments are often scheduled during the college's or university's winter break.

Between one season and the next, postseason tournaments and preseason tournaments are often held in collegiate wrestling and also in freestyle and Greco-Roman. The most active wrestlers often take part in those to sharpen their skills and techniques. Also, clinics and camps are often held for both wrestlers and their coaches to help refresh old techniques and gain new strategies. College wrestlers often serve as referees, volunteer coaches, assistants, or as counselors during many of the camps, clinics, and tournaments held during the off-season.

**Layout of the Mat**

The match takes place on a thick rubber mat that is shock-absorbing to ensure safety. A large outer circle between 32 to 42 feet in diameter that designates the wrestling area is marked on the mat. The circumference line of that circle is called the boundary line. The wrestling area is surrounded by a mat area or apron (or protection area) that is at least five inches in width that helps prevent serious injury. The mat area is designated by the use of contrasting colors or a two-inch wide line, which is part of the wrestling area and included in bounds. The wrestlers are within bounds when any part of either wrestler is on or inside this boundary line.

The mat can be no thicker than four inches nor thinner than a mat with the shock-absorbing qualities of a two-inch thick hair-felt mat. Inside the outer circle is usually an inner circle about 10 feet in diameter, designated by the use of contrasting colors or a two-inch wide line, although this is no longer specified by the *NCAA Wrestling Rules and Interpretations*. Wrestlers are encouraged to stay near the center of the mat within the inner circle, or else they risk being penalized for stalling (that is, deliberately attempting to slow down the action of the match). Each wrestler begins action at one of two one-inch starting lines inside the inner circle that is three feet long. Two one-inch lines close the ends of the starting lines and are marked red for the
wrestler from the visiting team and green for the wrestler from the home team. The two starting lines are 10 inches apart from each other and form a rectangle in the middle of the wrestling area. This rectangle designates the starting positions for the three periods. Additional padding may be added under the mat to protect the wrestlers, especially if the wrestlers are competing on a concrete floor. All mats that are in sections are secured together.

Equipment

- A **singlet** is a one-piece wrestling garment made of spandex that should provide a tight and comfortable fit for the wrestler. It is made from nylon or lycra and prevents an opponent from using anything on the wrestler as leverage. The singlets are usually light or dark depending on whether the wrestlers are competing at home or abroad, and they are usually designed according to the institution's or club's team colors. Wrestlers also have the option of wearing **leggings** with their singlets. Recently, some college wrestlers have begun to wear short-sleeved, tight-fitting shirts with accompanying shorts made out of spandex or lycra.[19][20]

- A special pair of **shoes** is worn by a wrestler to increase his mobility and flexibility. Wrestling shoes are light and flexible in order to provide maximum comfort and movement. Usually made with rubber soles, they help give the wrestler's feet a better grip on the mat.

- **Headgear**, equipment worn around the ears to protect them, is mandatory in collegiate wrestling. Headgear is worn to decrease the participant's own risk for injury, as there is the potential to develop cauliflower ear.

- In addition, special equipment, such as **face masks, braces, mouthguards, hair coverings, knee pads, or elbow pads** may be worn by either wrestler. Anything worn that prevents normal movement or execution of holds is prohibited.

The Match

Usually at the start of the second and third periods, both wrestlers start in the referee's position, with one wrestler on the bottom with hands spread out and feet held together, and one wrestler
on the top with one hand around the opponent's waist for control and the other on the opponent's elbow.

A **match** is a competition between two individual wrestlers of the same weight class. The match consists of three periods totaling seven minutes with an overtime round if necessary if the score is tied at the end of regulation.

The main official at the wrestling match is the **referee**, who is in full control in matters of judgment at the competition and is responsible for starting and stopping the match; observing all holds; signaling points; calling penalties such as illegal holds, unnecessary roughness, fleeing the mat, or flagrant misconduct; and finally observing a full view of and determining the fall. There can also be one **assistant referee** (especially at tournaments) that helps the referee with making any difficult decisions and in preventing error. Also, **scorers** are there to record the points of the two individual wrestlers. Finally, a match or meet **timekeeper** with **assistant timekeepers** are present to note the match time, timeouts, and time advantage and work with the scorers.

### Period Format

- **Pre-match**

Each wrestler is called by the referee, steps onto the mat, and may put on a green (for the home team) or red (for the visiting team) anklet about three inches wide which the referee will use to indicate scoring. The referee then prepares the wrestlers to begin the first period.

- **First Period**

The referee prepares both wrestlers for the first period by making sure each wrestler is correctly in the **neutral position**. The neutral position has the two wrestlers standing opposite each other on their feet. Each wrestler starts with his lead foot on the green or red area of the starting lines, and his other foot even with or behind the lead foot. Both wrestlers then usually slightly crouch with their arms in front of them at or above waist level. In this position, neither wrestler is in control. When the referee is certain that both wrestlers are correctly in the neutral position, he blows the whistle to begin the first period (as well as whenever wrestling is resumed, such as at
the beginning of the second and third periods, when contestants resume wrestling after going out of bounds, etc.). The match commences with each wrestler attempting to take down his opponent. The first period in college and university matches is three minutes long.

- **Second Period**

If the match is not ended by a fall, technical fall, default, or disqualification, the referee then prepares both wrestlers to begin the second period. After the first period ends, one wrestler will have the choice of starting position in the second period. In dual meets, this is determined by the colored disk toss that took place before the meet began. In tournaments, the referee will toss a colored disk, with a green-colored side and a red-colored side, and the winner of that disk toss will have the choice of position. The wrestler could choose between the neutral position, or as is most commonly chosen to begin in a place called the referee's position on the mat. The referee's position has both wrestlers beginning action at the center of the mat with one wrestler (in the defensive starting position) on the bottom with his hands spread apart in front of the forward starting line and his knees spread apart behind the rear starting line with his legs held together. The other wrestler on the top (in the offensive starting position) then kneels beside him with one arm wrapped around the bottom wrestler's waist (with the palm of his hand against the opponent's navel) and the other hand on or over the back of the opponent's near elbow for control. Most often, the wrestler with the choice chooses the defensive (bottom) position because of the relative ease of scoring an escape or reversal in comparison to a near fall. The wrestler could also defer his choice to the beginning of the third period.

More recently, another starting position choice has been allowed, known as the optional offensive starting position or optional start. After the wrestler with the choice (the offensive wrestler) indicates his intention to the referee, the referee lets the defensive wrestler adjust and begin in the defensive starting position. Next, the offensive wrestler goes to either side of the defensive wrestler or behind him, with all his weight supported by both his feet or by one or both knees. The offensive wrestler would then place both his hands on the opponent's back between the neck and the waist. When the referee starts the match by blowing the whistle, the defensive wrestler then has the opportunity to get back to his feet in a neutral position. Any of the starting positions may be used to resume action during a period when the wrestlers go off the mat,
depending on the referee's judgment as to whether any or which wrestler had the position of advantage.

The second period is two minutes long

- **Third Period**

If the match is not ended by a fall, technical fall, default, or disqualification, the referee then prepares both wrestlers to begin the third period. The wrestler who did not choose the starting position for the second period now chooses the starting position. The third period is also two minutes long.

- **First Overtime Round**

- **Sudden Victory Period**

If the third period ends in a tie, a one-minute, sudden victory period occurs. Both wrestlers start in the neutral position. The first wrestler to score a point wins. Time advantage is not used in any sudden victory period.

- **Tiebreaker Periods**

If no points are scored in the sudden victory period, or if the first points were scored simultaneously, two 30-second tiebreaker periods occur. Both wrestlers start in the referee's position. The wrestler who scored the first points (besides escapes and penalty points) in regulation has the choice of top or bottom position. If the only points scored in regulation were for escapes or penalties, the choice of position will be given to the winner of a colored disk toss. After the wrestler makes his choice, the two contestants then wrestle. Either of the two wrestlers must try to score as many points as he can. Once one 30-second period is over, the wrestler who was in the bottom position then wrestles on the top in another 30-second period. Whoever scores the most points (or is awarded a fall, default, or disqualification) wins the match. Time advantage is kept, and points are awarded accordingly.
• **Second Overtime Round**

If no wrestler has won by the end of the two tiebreaker periods, a second overtime round starts with a one-minute, sudden victory period, and then two 30-second tiebreaker periods for each wrestler. The wrestler who did not have the choice of position in the previous overtime round's first tiebreaker period now has the choice of position in this overtime round's first tiebreaker period. If the score remains tied after the end of the second overtime round, the wrestler who has one second or more of net time advantage from the two rounds of tiebreaker periods will be declared the winner.

• **Subsequent Overtime Round(s)**

If a winner still cannot be determined, overtime rounds that are structured like the second round of overtime take place until one wrestler scores enough points for the victory.

• **Post-match**

After the match is completed, regardless of the victory condition, the wrestlers will return to the center of the mat (on the 10-foot inner circle) while the referee checks with the scorer's table. Upon the referee's return to the mat, the two wrestlers shake hands, and the referee proclaims the winner by raising the winner's hand. Both contestants then return to their team benches from the mat.

**Match scoring**

In collegiate wrestling, points are awarded mostly on the basis of control. Control occurs when a wrestler has gained restraining power over an opponent, usually, by controlling the opponent's legs and torso. When a wrestler gains control and maintains restraining power over an opponent, he is said to be in the **position of advantage**. Scoring can be accomplished in the following ways:

• **Takedown (2 points)**: A wrestler is awarded two points for a takedown when, from the neutral position, he gains control by taking the other wrestler down to the mat in bounds
and beyond reaction time. This is most often accomplished by attacking the legs of the opponent, although various throws can also be used to bring a wrestler down to the mat.

- **Escape (1 point):** A defensive wrestler who is being controlled on the bottom is awarded one point for an escape when the offensive wrestler loses control of the opponent while any part of either wrestler remains in bounds. An escape may be awarded when the wrestlers are still in contact.

- **Reversal (2 points):** A defensive wrestler who is being controlled on the bottom is awarded two points for a reversal when he comes from the bottom/defensive position and gains control of the opponent either on the mat or in a rear standing position. Reversal points are awarded on the edge of the wrestling area if control is established while any part of either wrestler remains in bounds.

- **Near Fall:** Near fall points are similar to the points awarded for exposure or the danger position in the international styles of wrestling, but the emphasis for near falls is on control, not risk. Near fall criteria are met when: (1) the offensive wrestler holds the defensive wrestler in a high bridge or on both elbows; (2) the offensive wrestler holds any part of both his opponent's shoulders or scapulae (shoulder blades) within four inches of the mat; or (3) the offensive wrestler controls the defensive wrestler in such a way that one of the bottom wrestler's shoulders or scapulae, or the head, is touching the mat, and the other shoulder or scapula is held at an angle of 45 degrees or less to the mat. The referee counts the seconds off. Only one near fall is scored for a wrestler using the same pinning combination, regardless of the number of times the offensive wrestler places the defensive wrestler in a near fall position during the situation. Near fall points are also known as "back points." Much of the criteria for the near fall were used in a former scoring opportunity known as predicament in collegiate wrestling. When near fall points are given after the opponent is injured, signals an injury, or bleeds excessively, it is a consequence of what is sometimes referred to as the scream rule.

**(2 points):** Two points are given when near fall criteria are met for two to four seconds. Two points can also be granted in cases where a pinning combination is executed legally.
and a near fall is imminent, but the defensive wrestler is injured, signals an injury, or bleeds excessively before the near fall criterion is met.

**3 points**: Three points are given when near fall criteria are met for five seconds or more. After five seconds, the referee awards three points and stops counting. When a near fall criterion is met that is between two and four seconds, and the defensive wrestler is injured, indicates an injury, or bleeds excessively, three points are also awarded.

**4 points**: Four points are given when the criteria for a near fall are met for five seconds, and the defensive wrestler later is injured, indicates an injury, or bleeds excessively.

- **Penalty (1 or 2 points)**: One or two points can be awarded by the referee to the opponent for various penalty situations. "Unsportsmanlike conduct" by the wrestler includes swearing, teasing the opponent, etc. "Unnecessary roughness" involves physical acts during the match that exceed normal aggressiveness. "Flagrant misconduct" includes actions (physical or nonphysical) that intentionally attack the opponent, the opponent's team, or others in a severe way. Illegal holds are also penalized accordingly, and potentially dangerous holds are not penalized, but the match will be stopped by the referee. Also, "technical violations" such as stalling, interlocking hands, and other minor infractions are penalized. With some situations, such as stalling, a warning is given after the first occurrence, and if there is another occurrence the penalty point is given. In other situations, there is no warning and penalty points are automatically given. In general, after a certain number of occurrences where penalty points are given, the penalized wrestler is disqualified. A fuller treatment of the situations in which penalty points are awarded in college wrestling matches is found in the Penalty Table on pages WR-64 to WR-67 of the *2009 NCAA Wrestling Rules and Interpretations*.

- **Imminent Scoring**: When a match is stopped for an injury during a scoring situation (e.g. a takedown, reversal, or escape), and the referee determines that scoring would have been successful if the wrestling had continued, an injury timeout is charged to the injured wrestler and the applicable points are given to his non-injured opponent. This is also a consequence of the scream rule.
- **Time Advantage** or **Riding Time (1 point):** Whenever a wrestler is controlling an opponent on the mat in such a way that prevents an escape or a reversal, he is gaining time advantage (or riding time). An assistant timekeeper then records the time advantage of each wrestler throughout the match. At the end of the third period, one point is awarded to the wrestler with the greater time advantage, provided that the difference of time advantage between the two wrestlers is one minute or more. Points for time advantage are awarded only in college competition.

**Victory Conditions in Collegiate Wrestling**

A match can be won in the following ways:

- **Win by Fall:** The object of the entire wrestling match is to attain victory by what is known as the **fall**. A fall, also known as a **pin**, occurs when one wrestler holds any part of both of his opponent's shoulders or both of his opponent's scapulae (shoulder blades) in continuous contact with the mat for one second at the college level. The fall ends the match immediately, and the offensive wrestler who secured the fall is declared the winner. Falls (or pins) can be attained in many different ways. The most common way of securing the fall is through the various nelson holds, in particular, the half nelson. Other techniques used to secure falls are **cradles**, the **headlock (head and arm)**, single or double **armbars (bar arms)**, the "**back bow" and the leg Turk, the reverse body lock, the **guillotine**, the **leg split** (also known as the **banana split** or **spread eagle**), the **spladle**, the **figure-4 to the head**, the **straight body scissors**, and the **double grapevine** (also called the **Saturday night ride**).

- **Win by Technical Fall:** If a fall is not secured to end the match, a wrestler can win a match simply by points. If a wrestler can secure an advantage of 15 points over an opponent, then the wrestler can win the match by **technical fall**. A technical fall is very likely when one wrestler has great control over the other wrestler and is able to score near fall points repeatedly. If the 15-point advantage is gained while the offensive wrestler has his opponent in a pinning situation, the match would continue to allow the offensive wrestler to secure the fall. If the offensive wrestler is unable to secure a fall, the match
ends once a near fall situation is no longer seen by the referee or when the wrestlers return to the neutral position.

- **Win by Major Decision**: If no fall or technical fall occurs, a wrestler can also win simply by points. If the match concludes, and a wrestler has a margin of victory of eight or more points over an opponent, but under the 15 points needed for a technical fall, the win is known as a **major decision**.

- **Win by Decision**: If the match concludes, and a wrestler has a margin of victory of less than eight points over an opponent, or wins the first point in a sudden victory period in overtime without gaining a fall, default, or a win by an opponent's disqualification, the wrestler then wins by **decision**.

- **Win by Default**: If for any reason, a wrestler is unable to continue competing during the match (e.g. because of injury, illness, etc.), his opponent is awarded victory by **default**. A wrestler can concede a win by default to his opponent by informing the referee himself of his inability to continue wrestling. The decision to concede the win by default can also be made by the wrestler's coach.

- **Win by Disqualification**: If a wrestler is banned from participating further in a match by virtue of acquiring penalties or for flagrant misconduct, his opponent wins by **disqualification**.

- **Win by Forfeit**: A wrestler also may gain a victory by **forfeit** when the other wrestler for some reason fails to appear for the match. In a tournament, the wrestler could also win by a **medical forfeit** if for some reason his opponent becomes ill or injured during the course of the tournament and decides not to continue wrestling. For a wrestler to win by forfeit or medical forfeit however, he must appear on the mat in a wrestling uniform. The existence of the forfeit condition encourages teams to have at least one varsity (and one junior varsity) competitor at every weight class. The wrestler who declared the medical forfeit is excused from further weigh-ins but is eliminated from further competition.
Team Scoring in Dual Meets

On the college level in a dual meet, the wrestler not only wins the match for himself, but also gains points for his team. The number of points awarded to a team during a dual meet depends on the victory condition. It is possible for a team to lose team points in certain infractions, such as unsportsmanlike conduct, flagrant misconduct, team personnel illegally leaving the reserved zone around the mat, and unauthorized questioning of the referee by the coach.

Summary of Team Scoring in a Dual Meet

<table>
<thead>
<tr>
<th>Victory Condition</th>
<th>Number of Team Points Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>6</td>
</tr>
<tr>
<td>Forfeit</td>
<td>6</td>
</tr>
<tr>
<td>Default</td>
<td>6</td>
</tr>
<tr>
<td>Disqualification</td>
<td>6</td>
</tr>
<tr>
<td>Technical Fall (with near fall points scored during the course of the match)</td>
<td>5</td>
</tr>
<tr>
<td>Technical Fall (with no near fall points scored during the course of the match)</td>
<td>4</td>
</tr>
<tr>
<td>Major Decision</td>
<td>4</td>
</tr>
<tr>
<td>Decision</td>
<td>3</td>
</tr>
</tbody>
</table>

In a dual meet, when all team points are totaled, the team with the most points wins the competition. In all victory cases, if there are junior varsity matches, the junior varsity and varsity competitions are scored separately. If this is the case, it is entirely possible for one participating institution to win the junior varsity dual meet and another participating institution to win the varsity dual meet. On the college level, it is possible for a dual meet to end in a tie, except in dual meet advancement tournaments, where then the tie is broken by one team point awarded to the winning team based on certain criteria.
Team Scoring in Tournaments

In a tournament, most of the team points are scored for advancement. For example, a team winning a match in the championship bracket would be awarded one team advancement point; one-half of an advancement point would be awarded if a team won a match in the wrestle-back bracket. The corresponding team points also apply if a wrestler from the team gained a bye and then won his next match in that bracket. Two additional advancement points are for victories by fall, default, disqualification, and forfeit (including victories by medical forfeit). One and one-half additional advancement points are awarded for victories by technical fall with near fall points scored in the course of the match. One additional advancement point is awarded for victories by technical fall victories with no near fall points scored during the course of the match and also for victories by major decision. A team could then win a certain number of placement points if its wrestlers have placed individually in the championship and wrestle-back brackets. Thus, whole teams are awarded placements (first, second, etc.) based on their total number of victories.

Individual placement points are also awarded. For example, in a tournament scoring eight places, the winner of a quarterfinal or a semifinal in the championship bracket (where first and second places are awarded) would win six place points. The winners of first and second place would then win four additional place points. In the wrestle-back bracket (where third and fifth places are awarded), the winner of a semifinal match, for example, would receive three place points. The winners of third, fifth, and seventh place would receive one additional place point, and so on. A more detailed account of how individual and team points are awarded for tournaments is given on pages WR-49 to WR-51 of the 2009 NCAA Wrestling Rules and Interpretations.

High School Level

Also known as scholastic wrestling when practiced at the high school and middle (junior high) school level, collegiate wrestling differs from wrestling at the high school level in multiple aspects. Scholastic wrestling is regulated by the National Federation of State High School Associations (NFHS). This association mandates that high school matches are to have periods of
shorter length, three periods consisting of two minutes each, than collegiate matches which begin with a three minute first period. Additionally, college wrestling uses the concept of "time advantage" or "riding time" in the referees position, while high school wrestling does not.

According to an Athletics Participation Survey taken by the National Federation of State High School Associations, boys' wrestling ranked eighth in terms of the number of schools sponsoring teams, with 9,445 schools participating in the 2006-07 school year. Also, 257,246 boys participated in the sport during that school year, making scholastic wrestling the sixth most popular sport among high school boys. In addition, 5,048 girls participated in wrestling in 1,227 schools during the 2006-07 season. Scholastic wrestling is currently practiced in 49 of the 50 states; only Mississippi does not officially sanction scholastic wrestling for high schools and middle schools. Arkansas, the 49th state to sanction high school wrestling, began scholastic wrestling competition in the 2008-09 season.

**Folkstyle - Age-group Level**

At young ages, independent tournaments are often run in the freestyle and Greco-Roman styles. There are also tournaments where wrestlers compete in a style very similar to collegiate or high school (scholastic) wrestling. To differentiate this style from freestyle and Greco-Roman, the term folkstyle wrestling is a more commonly used phrase than collegiate wrestling.

**Professional wrestling**

Professional wrestling is a form of sporting theatre which contains strong elements of mock combat and catch wrestling. Most matches are prearranged by the promotion's booking staff and contain choreographed content and scripted outcomes. Its origins date to 19th-century carnival sideshows and music halls, as part of displays of athleticism and strength. Modern professional wrestling usually features striking and grappling techniques, which are modeled after diverse sets of wrestling and pugilistic styles from around the world.

Professional wrestling is especially prevalent in Japan and North American countries like the U.S. and Mexico. In Brazil, it was very popular from the 1960s to the early 1980s, where it was called Telecatch. High-profile figures in the sport have become celebrities or cultural icons in
their native or adopted home countries. Although professional wrestling started out as petty acts in sideshows, traveling circuses and carnivals, today it is a billion-dollar industry. Revenue is drawn from ticket sales, television broadcasts, branded merchandise and home video. Recently, internet programming has also been utilized, adding to the aforementioned methods. Broadcasting, known on the internet as streaming, of live and past events is foremost in internet-related revenue earnings. Pro wrestling was instrumental in making pay-per-view a viable method of content delivery. Annual shows such as WrestleMania, SummerSlam and the Royal Rumble are among the highest-selling pay-per-view programming each year. Home video sales dominate the Billboard charts Recreational Sports DVD sales, with wrestling holding anywhere from 3 to 9 of the top 10 spots every week. Billboard's 2008 year-end sales show World Wrestling Entertainment (WWE) holding 14 of the top 20 for the entire year.

Currently, the largest professional wrestling company worldwide is the United States-based World Wrestling Entertainment (WWE), which absorbed many smaller regional companies in the late twentieth century, as well as its primary competitors in early 2001, World Championship Wrestling (WCW) & Extreme Championship Wrestling (ECW). Other prominent professional wrestling companies are Total Nonstop Action Wrestling (TNA) and Ring of Honor (ROH). In Mexico, the top promotions are Consejo Mundial de Lucha Libre and Asistencia Asesoría y Administración. In Japan, it is New Japan Pro Wrestling, All Japan Pro Wrestling, and Pro Wrestling NOAH.

Several documentaries have been produced looking at professional wrestling, most notably, Beyond the Mat directed by Barry W. Blaustein, and Wrestling with Shadows featuring wrestler Bret Hart and directed by Paul Jay. There have also been many fictional depictions of wrestling; in 2008, Mickey Rourke's Oscar-nominated performance in The Wrestler was widely acclaimed. Rourke's role depicted an aging past-his-prime wrestler struggling with drugs, health, money and personal relationships, but above all his relationship with pro wrestling.

Rules

The nature of professional wrestling is only one of the many differences it has with traditional wrestling. There is no governing authority for professional wrestling rules, although there is a
general standard which has developed. Each promotion has their own variation, but all are similar enough to avoid confusion most of the time. Any rule described here is simply a standard, and may or may not correspond exactly with any given promotion's ruleset.

**General structure**

Matches are held between two or more sides ("corners"). Each corner may consist of one wrestler, or a team of two or more. Most team matches are governed by tag team rules (see below). Other matches are free-for-alls, with multiple combatants but no teams. In all variants, there can be only one winning team or wrestler.

The standard method of scoring is the "fall", which is accomplished by:

- Pinning the opponent's shoulders to the mat, typically for three seconds (though other times have been used)
- Knocking out or otherwise incapacitating the opponent
- Forcing the opponent to submit
- A forfeit via a disqualified opponent
- Or the opponent remaining outside the ring for too long (countout)

These are each explained in greater detail below. Typically, falls must occur within the ring area.

Most wrestling matches last for a set number of falls, with the first side to achieve the majority number of pinfalls, submissions, or countouts being the winner. Historically, matches were wrestled to 3 falls ("best 2 out of 3") or 5 falls ("best 3 out of 5"). The standard for modern matches is one fall. However, even though it is now standard, many announcers will explicitly state this (e.g. "The following contest is set for one fall with a 20 minute time limit!") These matches are given a time limit; if not enough falls are scored by the end of the time limit, the match is declared a draw. Modern matches are generally given a 10- to 30-minute time limit for standard matches; title matches can go for up to one hour.

An alternative is a match set for a prescribed length of time, with a running tally of falls. The entrant with the most falls at the end of the time limit is declared the winner. This is usually for
20, 30 or 60 minutes, and is commonly called an Iron Man match. This type of match can be modified so that fewer types of falls are allowed.

In matches with multiple competitors, an elimination system may be used. Any wrestler who has a fall scored against them is forced out of the match, and the match continues until only one remains. However, it is much more common when more than two wrestlers are involved to simply go one fall, with the one scoring the fall, regardless of who they scored it against, being the winner. In championship matches, this means that, unlike one-on-one matches (where the champion can simply disqualify himself to retain the title via the Champion's Advantage), the champion does not have to be pinned or involved in the decision to lose the championship.

Many modern specialty matches have been devised, with unique winning conditions. See Professional wrestling match types.

Every match must be assigned a rule keeper known as a referee, who is the final arbitrator. (In multi-man lucha libre matches, two referees are used, one inside the ring and one outside.) Although their actions are also frequently scripted for dramatic effect, referees are subject to certain general rules and requirements in order to maintain the theatrical appearance of unbiased authority. The most basic rule is than an action must be seen by a referee to be declared for a fall or disqualification. This allows for heel characters to gain a scripted advantage by distracting or disabling the referee in order to perform some ostensibly illegal maneuver on their opponent. Most referees are unnamed and essentially anonymous, but special guest referees may be used from time to time; by virtue of their celebrity status, they are often scripted to dispense with the appearance of neutrality and use their influence to unfairly influence the outcome of the match for added dramatic impact.

Matches are held within a wrestling ring, an elevated square canvas mat with posts on each corner. A cloth apron hangs over the edges of the ring. Three horizontal ropes or cables surround the ring, suspended with turnbuckles which are connected to the posts. For safety, the ropes are padded at the turnbuckles and cushioned mats surround the floor outside the ring (though in kayfabe, the mats do not offer much protection. Jerry "the King" Lawler once mentioned at the Royal Rumble in 2005 "Those mats are more to protect the floor than they are the wrestlers that
are out there."). Guardrails or a similar barrier enclose this area from the audience. Wrestlers are generally expected to stay within the confines of the ring, though matches sometimes end up outside the ring, and even in the audience, to add excitement.

**Tag rules**

In some team matches, only one entrant from each team may be designated as the "legal" or "active" wrestler at any given moment. Two wrestlers must make physical contact (typically palm-to-palm) in order to transfer this legal status. This is known as a **tag**, with the participants **tagging out** and **tagging in**. Typically the wrestler who is tagging out has a 5-second count to leave the ring, whereas the one tagging in can enter the ring at any time, resulting in heels legally double-teaming a face.

The non-legal wrestlers must remain outside the ring or other legal area at all times (and avoid purposeful contact with the opposing wrestlers) or face reprimand from the referee. In most promotions, the wrestler to be tagged in must be touching the turnbuckle on his corner, or a cloth strap attached to the turnbuckle.

Some multi-wrestler matches allow for a set number of legal wrestlers, and a legal wrestler may tag out to any other wrestler, regardless of team. In these matches, the tag need not be a mutual effort, and this results in active wrestlers being tagged out against their will, or non-legal wrestlers forced to enter the battle.

In a Texas Tornado Tag Team match, all the competitors are legal in the match, and tagging in and out is not necessary.

Regardless of rules of tagging, you can **not** pin your own tag team partner, even if it is technically possible from the rules of the match (e.g. Texas Tornado rules, or a thee-way tag team match). This is called the **Outlaw Rule** because the first team to attempt to use that (in an attempt to unfairly retain their tag team titles) was the New Age Outlaws.
Techniques

Wrestlers may grab, hold, twist, or strike any part of an opponent's body, except the throat. That goes for no disqualification matches too. Choking is strictly not allowed even in a no DQ Match.

Wrestlers may strike an opponent using any part of their own limbs, head or body, with the following exceptions: a wrestler may not punch his or her opponent with a closed fist nor kick his or her opponent with the toe of their boot. Biting is not allowed, nor is spitting in the eyes. When wrestlers do this, however, they usually get away with it with just an admonishment from the referee.

Wrestlers may lift an opponent and throw them, drop them, or otherwise force them to the mat. Such techniques which land an opponent on the head or neck, such as the piledriver, may be disallowed by some promotions.

A wrestler may jump onto an opponent, whether standing or lying down, in any manner, including with a clenched fist (à la Jerry Lawler's diving fist) or the toe of a boot (à la Randy Orton's punt attack).

Any legal wrestler is open to attack from any direction at any time, including when they are downed, as long as they are within the ring area enclosed by the ring ropes. They may also be subject to attack if they are completely outside the ring, as long as no part of their body is touching, or directly underneath, a ring rope. If any part of either wrestler is in contact with the ropes or has otherwise broken the plane of ropes all grappling contact between the wrestlers must be broken within a five count or else the attacking wrestler may be subject to disqualification. This rule is often used strategically in order to escape from a submission hold, and a wrestler can break the plane of the ropes by placing his foot or other body part on (or under) the ropes to avoid losing by pinfall. This is commonly referred to as a rope break.
Decisions

Pinfall

In order to score by pinfall, a wrestler must pin both his opponent's shoulders against the mat while the referee slaps the mat three times (referred to as a "three count"). This is the most common form of defeat. If a wrestler's shoulders are down (both shoulders touching the mat) and any part of the opponent's body is lying over the opponent, it is completely legal for the three count to be made. This often results in pins that can easily be kicked out of, if the defensive wrestler is even slightly conscious. For example, an attacking wrestler who is half-conscious may simply drape an arm over a prone opponent, or a cocky wrestler may simply place his foot gently on a prone opponent's body, prompting a three-count from the referee.

Illegal pinning methods include using the ropes for leverage and hooking the opponent's clothing, which are therefore popular cheating methods for heels, unless certain stipulations make such an advantage legal. Such pins as these are rarely seen by the referee and are subsequently often used by heels and on occasion by cheating faces to win matches.

Occasionally, there are instances where a pinfall is made where both wrestlers' shoulders were on the mat for the three count. This situation will most likely lead to a draw, and in some cases a continuation of the match or a future match to determine the winner.

Because a pinfall only requires a three-count from the referee, as opposed to a ten-count from a boxing referee to score a technical knockout, this rule gave birth to the saying "It only takes three seconds to beat your opponent." Indeed, many a seemingly-invincible juggernauts have been instantly defeated with a single school boy pin.

Submission

To score by submission, the wrestler must make his opponent give up, usually, but not necessarily, by putting him in a submission hold (i.e., figure four leg-lock, arm-lock, sleeper-hold etc.).
Passing out in a submission hold constitutes a loss by knockout. To determine if a wrestler has passed out in WWE, the referee usually picks up and drops his hand. If it drops three consecutive times without the wrestler having the strength to stop it from falling, the wrestler is considered to have passed out. At one point this was largely ignored. However, the rule is now much more commonly observed for safety reasons. If the wrestler has passed out, the opponent then scores by submission.

Also, a wrestler can win by knockout if he does not resort to submission holds, but stills pummels his opponent to the point that he is completely out cold. To check for a knockout in this manner, a referee will wave his hand in front of the wrestlers' face; if the wrestler does not react in any way, the referee will award the victory to the other wrestler. This method of winning is usually awarded to wrestlers with "psycho" gimmicks, such as Umaga, who care nothing for pinfalls and victories, and desire only to inflict pain onto others.

It should be noted that, despite the "champion's advantage," which states that a championship can only change hands by pinfall or submission, a knockout victory will also award them the championship, as it is still considered a decisive victory.

A wrestler may voluntarily submit by verbally informing the referee (usually used in moves such as the Mexican Surfboard, where all four limbs are incapacitated, making tapping impossible). Also, a wrestler can indicate a voluntary submission by "tapping out": that is, tapping a free hand against the mat or against an opponent. Occasionally, a wrestler will reach for a rope (see rope breaks below), only to put his hand back on the mat so he can crawl towards the rope some more; this is NOT a submission, and the referee decides what his intent is. Submission was initially a large factor in professional wrestling, but following the decline of the submission-oriented catch-as-catch-can style from mainstream professional wrestling, the submission largely faded. Despite this, some wrestlers, such as Ric Flair, Bret Hart, Kurt Angle, Chris Jericho, Ken Shamrock, The Undertaker, Dean Malenko, and Chris Benoit, became famous for winning matches via submission. A wrestler with a signature submission technique is portrayed as better at applying the hold, making it more painful or more difficult to get out of than others who use it.
Since all contact between the wrestlers must cease if any part of the body is touching, or underneath, the ropes, many wrestlers will attempt to break submission holds by deliberately grabbing the bottom ropes. This is called a **rope break**, and it is one of the most common ways to break a submission hold. Most holds leave an arm or leg free, so that the person can tap out if he wants. Instead, he uses these free limbs to either grab one of the ring ropes (the bottom one is the most common, as it is nearest the wrestlers) or drape his foot across, or underneath one. Once this has been accomplished, and the accomplishment is witnessed by the referee, the referee will demand that the offending wrestler break the hold, and start counting to five if the wrestler does not. If the referee reaches the count of five, and the wrestler still does not break the hold, he is disqualified.

If a manager decides that his client wrestler should tap out, but cannot convince the wrestler himself to do so, he may **throw in the towel** (literally taking a gym towel and hurling it into the referee's line of sight); this is the same as a submission, as the manager is, in kayfabe, considered the wrestlers agent, and therefore, authorized to make formal decisions (such as forfeiting a match) on the client's behalf. One of the most infamous examples of this happened in 1983 when the Iron Sheik had Bob Backlund in a camel clutch, and Backlund's manager, Arnold Skaaland, threw in the towel to save Backlund's career.

**Countout**

A countout (alternatively "count-out" or "count out") happens when a wrestler is out of the ring long enough for the referee to count to ten (or twenty), and thus disqualified. The count is broken and re-started when a wrestler in the ring exits the ring. Playing into this, some wrestlers will "milk" the count by sliding in the ring, and immediately sliding back out, forcing the referee to restart the match. With both wrestlers outside the ring, double countouts are possible and, although relatively rare, are an easy way to have a match end in a draw.

Since the count is restarted whenever a wrestler inside the ring exits the ring, a common ploy (especially among heels) is to slide underneath the bottom rope of one side of the ring, and instantly slide back out. As he was technically inside the ring for a split second before exiting
again, it is sufficient to restart the count. Heels often use this tactic in order to buy themselves more time to catch their breath, or to attempt to frustrate their babyface opponents.

If all the active wrestlers in a match are down inside the ring at the same time, the referee will begin a count (usually 10 seconds). If nobody rises to their feet by the end of the count, the match is ruled a draw. Any participant who stands up in time will end the count for everyone else. In some promotions, Championships cannot change hands via a count-out, unless the on-screen authority declares it for at least one match, although in others, championships may change hands via countout.

**Disqualification**

Disqualification from a match is called for a number of reasons:

- Performing any illegal holds or maneuvers, such as refusing to break a hold when an opponent is in the ropes, hair-pulling, choking or biting an opponent, or repeatedly punching with a closed fist. These violations are usually subject to a referee-administered five count and will result in disqualification if not released before.
- Attacking an opponent's eye, such as raking it, poking it, gouging it, punching it or other severe attacks to the eye.
- Any outside interference involving a person not involved in the match striking or holding a wrestler. If a heel attempts to interfere but is ejected from the ring by a wrestler or referee before this occurs, there is usually no disqualification. In this disqualification method, the wrestler being attacked by the foreign member is awarded the win. Sometimes, however, this can work in heels' favor. In February 2009, Shawn Michaels, who was under the kayfabe employment of John "Bradshaw" Layfield, interfered in a match and super kicked JBL in front of the referee in order to get his employer the win via "outside interference."
- Striking an opponent with a foreign object (unless the rules of the match specifically allow this; see hardcore wrestling).
- A direct low blow to the groin (unless the rules of the match specifically allow this).
- Intentionally laying hands on the referee or to an extreme case, often in special referee matches, touching the referee with any body parts.
- Pulling an opponent's wrestling trunks for a pinfall during a match (although this usually only results in nullification of the pinfall).
- Pulling an opponent's mask off during a match (this is illegal in Mexico, and sometimes in Japan).
- In a Royal Rumble, it is illegal to enter the ring before your due entrance.

In practice, the rules of the fight are often violated without disqualification due to the referee being distracted and not seeing the offense, or the referee seeing the offense but allowing the match to continue. Usually, the only offenses that the referee will see and immediately disqualify the match on (as opposed to having multiple offenses) are low blows, weapon usage, interference, or assaulting the referee. In WWE, a referee must see the violation with his own eyes to rule that the match end in a disqualification (simply watching the video tape is not usually enough) and the referee's ruling is almost always final, although dusty finishes (named after, and made famous by, Dusty Rhodes) will often result in the referee's decision being overturned. It is not uncommon for the referees themselves to get knocked out during a match, which is commonly referred to by the term "ref bump". While the referee remains "unconscious", rules are often violated at will. In some cases, a referee might disqualify a person under the presumption that it was that wrestler who knocked him out; most referee knockouts are arranged to allow a wrestler, usually a heel, to gain an advantage. For example, a wrestler may get whipped into a referee at a slower speed, knocking the ref down for short amount of time; during that interim period, one wrestler may pin his opponent for a three-count and would have won the match but for the referee being down (sometimes, another referee will sprint to the ring from backstage to attempt to make the count, but by then, the other wrestler has had enough time to kick out on his own accord).

If all participants in a match continue to breach the referee's instructions, the match may end in a double disqualification, where both wrestlers or teams (in a tag team match) have been disqualified. The match is essentially nullified, and called a draw or in some cases a restart or the same match being held at a pay-per-view or next night's show.
In most wrestling promotions, a championship cannot change hands as a result of a disqualification, unless the on-screen authority figure declares that the championship via disqualification which is good for only at least one match, often referred to as the "champion's advantage." Playing into this, some heel wrestlers will attempt to "get themselves disqualified" to "protect" their championships, although in some promotions, the champion may lose his championship if he gets disqualified.

A relatively recent trend in wrestling has been the development of the no-disqualification (or Hardcore) match. This type of match became increasingly prominent during the 1990s, and was a particular feature of the Extreme Championship Wrestling (ECW) promotion. When WWE (then WWF) unveiled its new "Attitude" era in 1997, the no-disqualification match was used as a centerpiece for this new design of wrestling, and a Hardcore Title was offered between 1998 and 2002. Completely new matches developed from the Hardcore/no-DQ match, including:

- Tables, Ladders, and Chairs (a ladder match where all three items may be used as a weapon against an opponent).
- Hardcore match (a no-disqualification match where falls count anywhere, even out of the venue).

**Draw**

A professional wrestling match can end in a draw. A draw occurs if both opponents are simultaneously disqualified (as via countout), neither opponent is able to answer a ten-count, or both opponents simultaneously win the match. The latter can occur if, for example, one opponent's shoulders touch the mat while maintaining a submission hold against another opponent. If the opponent in the hold begins to tap out at the same time a referee counts to three for pinning the opponent delivering the hold, both opponents have legally achieved scoring conditions simultaneously. Traditionally, a championship may not change hands in the event of a draw, though some promotions such as Total Nonstop Action Wrestling have endorsed rules where the champion may lose a title by disqualification. A variant of the draw is the time-limit draw, where the match does not have a winner by a specified time period (a one-hour draw, which was once common, is known in wrestling circles as a "Broadway").
No contest

A wrestling match may be declared a No Contest if the winning conditions are unable to occur. This can be due to excessive interference, loss of referee's control over the match, one or more participants sustaining debilitating injury not caused by the opponent, or the inability of a scheduled match to even begin. A No Contest is a state separate and distinct from a draw — a draw indicates winning conditions were met. Although the terms are sometimes used interchangeably in practice, this usage is technically incorrect.

Dramatic elements

While each wrestling match is ostensibly a competition of athletics and strategy, the goal of each match from a business standpoint is to excite and entertain the audience. Although the competition is staged, dramatic emphasis can be utilized to draw out the most intense reaction from the audience. Heightened interest results in higher attendance rates, increased ticket sales, higher ratings on television broadcasts (which result in greater ad revenue), higher pay-per-view buyrates, and sales of branded merchandise and recorded video footage. All of these contribute to the profit of the promotion company.

Character/gimmick

In Latin America and English-speaking countries, most wrestlers (and other on-stage performers) portray character roles, sometimes with personalities wildly different from their own. These personalities are a gimmick intended to heighten interest in a wrestler without regard to athletic ability. Some can be unrealistic and cartoon-like (such as Kane or Doink the Clown), while others carry more verisimilitude (such as The Rock, Stone Cold Steve Austin, and CM Punk). In lucha libre, many characters wear masks, adopting a secret identity akin to a superhero, a near-sacred tradition.

An individual wrestler may keep one ring name for his entire career (cases in point include CM Punk, Randy Orton and Ricky Steamboat), or may change from time to time to better suit the demands of the audience or company. Sometimes a character is owned and trademarked by the company, forcing the wrestler to find a new one when he leaves (although a simple typeset
change, such as changing Rhyno to Rhino, can usually get around this), and sometimes a character is owned by the wrestler. Sometimes, a wrestler may change his legal name in order to obtain ownership of his ring name (examples include Andrew Martin and Warrior). Many wrestlers (such as The Rock and The Undertaker) are strongly identified with their character, even responding to the name in public or between friends. It's actually considered proper decorum for fellow wrestlers to refer to each other by their stage names/characters rather than their birth/legal names, unless otherwise introduced. A professional wrestling character's popularity can grow to the point that it makes appearances in other media (see Hulk Hogan and El Santo) or even give the performer enough visibility to enter politics (Antonio Inoki and Jesse Ventura, among others).

Typically, matches are staged between a protagonist (historically an audience favorite, known as a babyface, or "the good guy") and an antagonist (historically a villain with arrogance, a tendency to break rules, or other unlikable qualities, called a heel). In recent years, however, antiheroes have also become prominent in professional wrestling. There is also a less common role of a "tweener", who is neither fully face nor fully heel yet able to play either role effectively (case in point, Samoa Joe during his first run in TNA Wrestling from June 2005 to November 2006).

At times a character may "turn", altering their face/heel alignment. This may be an abrupt, surprising event, or it may slowly build up over time. It almost always is accomplished with a markable change in behavior on the part of the character. Some turns become defining points in a wrestler's career, as was the case when Hulk Hogan turned heel after being a top face for over a decade. Others may have no noticeable effect on the character's status. If a character repeatedly switches between being a face and heel, this lessens the effect of such turns, and may result in apathy from the audience. Vince McMahon is a good example of having more heel and face turns than anyone in WWE history.

As with personas in general, a character's face or heel alignment may change with time, or remain constant over its lifetime (the most famous example of the latter is Ricky Steamboat, a WWE Hall of Famer who remained a babyface throughout his entire career).
Story

While true exhibition matches are not uncommon, most matches tell a story analogous to a scene in a play or film, or an episode of a serial drama: The face will sometimes win (triumph) or sometimes lose (tragedy). Longer story arcs can result from multiple matches over the course of time. Since most promotions have a championship title, competition for the championship is a common impetus for stories. Also, anything from a character's own hair to his job with the promotion can be wagered in a match.

Some matches are designed to further a story of only one participant. It could be intended to portray him or her as a strong unstoppable force, a lucky underdog, a sore loser, or any other characterization. Sometimes non-wrestling vignettes are shown in order to enhance a character's image without the need for matches.

Other stories result from a natural rivalry between two or more characters. Outside of performance, these are referred to as feuds. A feud can exist between any number of participants and can last for a few days up to multiple decades. The feud between Ric Flair and Ricky Steamboat lasted from the late 1970s into early 1990s and allegedly spanned over two thousand matches (although most of those matches were mere dark matches). The career-spanning history between characters Mike Awesome and Masato Tanaka is another example of a long-running feud.

In theory, the longer a feud is built up, the more audience interest (aka heat) will exist. The main event of a wrestling show is generally the one with the most heat behind it. Commonly, a heel will hold the upper hand over a face until a final showdown, heightening dramatic tension as the face's fans desire to see him win.

Since the advent of television, many other elements have been utilized to tell story within a professional wrestling setting: pre- and post-match interviews, "backstage" skits, positions of authority, division rankings (typically the #1-contendership spot), contracts, lotteries, and even news stories on promotion websites.
Also, anything that can be used as an element of drama can exist in professional wrestling stories: romantic relationships (including love triangles and marriage), racism, classism, nepotism, favoritism, corporate corruption, family bonds, personal histories, grudges, theft, cheating, assault, betrayal, bribery, seduction, stalking, confidence tricks, extortion, blackmail, substance abuse, self-doubt, self-sacrifice; even kidnapping, sexual fetishism, necrophilia, misogyny, rape and death have been portrayed in wrestling. Some promotions have included supernatural elements such as magic, curses, the undead and satanic imagery. Celebrities would also be involved in storylines.

Commentators have become important in communicating the relevance of the characters' actions to the story at hand, filling in past details and pointing out subtle actions that may otherwise go unnoticed.

**Championships**

Professional wrestling mimics the structure of title match combat sports. Participants compete for a championship, and must defend it after winning it. These titles are represented physically by a belt that can be worn by the champion. In the case of team wrestling, there is a belt for each member of the team.

Almost all professional wrestling promotions have one major title, and some have more. Championships are designated by divisions of weight, height, gender, wrestling style and other qualifications.

Typically, each promotion only recognizes the "legitimacy" of their own titles, although cross-promotion does happen. When one promotion absorbs or purchases another, the titles from the defunct promotion may continue to be defended in the new promotion or be decommissioned.

Behind the scenes, the bookers in a company will place the title on the most accomplished performer, or those the bookers believe will generate fan interest in terms of event attendance and television viewership. Lower ranked titles may also be used on the performers who show potential, thus allowing them greater exposure to the audience. However other circumstances may also determine the use of a championship. A combination of a championship's lineage, the
caliber of performers as champion, and the frequency and manner of title changes, dictates the audience's perception of the title's quality, significance and reputation.

A wrestler's championship accomplishments can be central to their career, becoming a measure of their performance ability and drawing power. In general, a wrestler with multiple title reigns or an extended title reign is indicative of a wrestler's ability to maintain audience interest and/or a wrestler's ability to perform in the ring. As such, the most accomplished or decorated wrestlers tend to be revered as legends despite the predetermined nature of title reigns. American wrestler Ric Flair has had multiple world heavyweight championship reigns spanning over three decades. Japanese wrestler Último Dragón once held and defended a record 10 titles simultaneously.

**Non-standard matches**

Often a match will take place under additional rules, usually serving as a special attraction or a climactic point in a feud or storyline. Sometimes this will be the culmination of an entire feud, ending it for the immediate future (known as a blowoff match).

Perhaps the most well-known non-standard match is the cage match, in which the ring is surrounded by a fence or similar metal structure, with the express intention of preventing escape or outside interference—and with the added bonus of the cage being a potentially brutal weapon or platform for launching attacks.

Another example is the WWE's Royal Rumble match, which involves thirty participants in a random and unknown order. The Rumble match is itself a spectacle in that it is a once-yearly event with multiple participants, including individuals who might not interact otherwise. But it also serves as a catalyst for the company's ongoing feuds, as well as a springboard for new storylines—most importantly determining the main event at the following WrestleMania.

**Ring entrance**

While the wrestling matches themselves are the primary focus of professional wrestling, a key dramatic element of the business can be entrances of the wrestlers to the arena and ring. It is
typical for a wrestler to get their biggest crowd reaction (or "pop") for their ring entrance, rather than for anything they do in the wrestling match itself.

All notable wrestlers now enter the ring accompanied by music, and regularly add other elements to their entrance. The music played during the ring entrance will usually mirror the wrestler's personality. Many wrestlers, particularly in America, have music and lyrics especially written for their ring entrance. While invented long before, the practice of including music with the entrance gained rapid popularity during the 1980s, largely as a result of the huge success of Hulk Hogan and the WWF, and their Rock 'n' Wrestling Connection. With the introduction of the Titantron entrance screen in 1997, WWF/WWE wrestlers also had entrance videos made that would play along with the their entrance music.

Other dramatic elements of a ring entrance can include:

- a distinct sound or opening note in the music (used to elicit a Pavlovian response from the crowd). For example, the glass shattering in Steve Austin's entrance theme
- pyrotechnics or smoke
- darkening of the arena, often accompanied by mood lighting or strobe lighting, such as in The Undertaker's dramatic entrance
- entering in a manner in keeping with their character traits, such as a fast, highly energetic entrance, or a slow, stoic entrance. For example, The Ultimate Warrior would run at high speed down the entrance ramp and into the ring while Randy Orton would slowly and darkly walk to the ring.
- driving a motor vehicle into the arena. For example, Eddie Guerrero would arrive into the arena in a lowrider, the Disciples of Apocalypse on motorcycles, and The Mexicools on riding lawn mowers.
- acting out a trademark behavior, such as posing to display their muscularity, mounting the ring ropes, or sitting in the corner.
- talking to the crowd using a distinctive patter
- coming through the audience, such as The Sandman's beer drinking and can smashing entrance, or Diamond Dallas Page's exit through the crowd.
- accompaniment by a ringside crew or personal security, such as by Goldberg
Another method of entry involves descending from the ceiling with a Zip-line or rappel line and stunt harness. This has been done by Shawn Michaels at WrestleMania XII, and gained major controversy over its role in the death of wrestler Owen Hart.

Some of the bigger stars in the industry, such as Shawn Michaels, Triple H, The Undertaker, and The Sandman, can perform ring entrances lasting up to three minutes or more. It is not uncommon for ring entrances to sometimes last longer than the match itself, especially in matches involving a mismatch.

Special ring entrances are also developed for big occasions, most notably the WrestleMania event. For example, Both Wrestlemania's III and VI saw all wrestlers enter the arena on motorized miniature wrestling rings. Live bands are sometimes hired to perform live entrance music at special events.

**Wrestlers**

**Independent wrestlers**

Unlike most actual sports, the essence of professional wrestling's roots can still be seen all over the United States. Independent circuits can be found in almost any community in the United States, with some cities having numerous leagues using many of the same wrestlers as other nearby leagues. Many promotions have events at National Guard Armories, Recreation Centers, secondary schools, flea markets, churches, bars, and shopping center parking lots. Production values are almost always low, promotion is done by word of mouth, flyers, cable access television, and the internet. Wrestlers on the independent wrestling scene take a role more closely defined as independent contractors, working for multiple wrestling promotions and are generally paid per appearance. The majority of mainstream wrestlers begin on the independent circuit.

**Men's wrestling**

The vast majority of professional wrestlers are men, especially in the North American WWE & TNA, where they are usually large in size, often to extremes. Notable examples include André
the Giant, Hulk Hogan, Paul "Big Show" Wight, The Undertaker, Yokozuna, Giant Gonzales, The Great Khali and Kane. Usually, competitions or divisions are set up for men of similar wrestling styles, such as technical, brawling, high flying, lucha, submission or hardcore. However, matches involving different weight divisions are often created and are never referred to as unusual or against any rules, despite large differences in height, weight or strength. On very rare occasions, men and women will wrestle each other.

Women's wrestling

The women’s division of professional wrestling has maintained a recognized world champion since 1937, when Mildred Burke won the original World Women's title. She then formed the World Women's Wrestling Association in the early 1950s and recognized herself as the first champion, although the championship would be vacated upon her retirement in 1956. The NWA however, ceased to acknowledge Burke as their Women's World champion in 1954, and instead acknowledged June Byers as champion after a controversial finish to a high-profile match between Burke and Byers that year. Upon Byers' retirement in 1964, The Fabulous Moolah, who won a junior heavyweight version of the NWA World Women's Championship (the predecessor to the WWE Women's Championship) in a tournament back in 1958, was recognized by most NWA promoters as champion by default.

Traditionally, women’s matches were lower on the card and rarely considered main event material in the United States. Through the 1980s and into the mid 1990s, women’s wrestling in the US was presented as a serious sport on the same level as men’s wrestling, although it had considerably less popularity with short-lived revivals in both the major promotions of the time, World Wrestling Federation and World Championship Wrestling. It was not until the late 1990s that WWF began to present their women’s division with a focus on the women as "Divas" and eye-candy rather than athletes; many of these women acted as managers and valets, and had little training in wrestling ability. There was a brief period in the early-2000s, where the women's division on WWF's flagship show Raw was once again promoted as a serious sport with Lita and Trish Stratus as its top stars, and both women even headlined an edition of Raw in a main event match for the Women's Championship in late 2004; as is Total Nonstop Action Wrestling's ongoing women's division upon the inception of its Women's Championship in October 2007.
Matches and segments involving the Knockouts, a term used by TNA to refer to its female talent, have contributed to drawing some of the better ratings of Impact shows.

In Japan, women's wrestling or *joshi puroresu* has a long established history, with an all female promotion founded as early as 1955 (the predecessor to All Japan Women's Pro-Wrestling or AJW), and has always been presented as a serious, highly athletic sport on the same level as their male counterparts. The WWWA World Heavyweight Championship, which was directly descended from Burke's original World Women's title, was revived by AJW in 1970 and recognized as its top singles championship ever since. From the late 1970s until the dawn of the new millennium, women's wrestling experienced a wave of mainstream popularity in Japan unheard of anywhere else in the world. Many female wrestlers in Japan released recording albums and found some crossover success as pop stars, and the phenomenal success of the *Crush Gals* tag team in particular was often compared to Hulk Hogan's *Hulkamania* during the same time period in the USA. While female wrestling in Japan is traditionally handled by promotions that specialize in *joshi puroresu*, Frontier Martial-Arts Wrestling, a male-dominated promotion known for its "hardcore wrestling", also had a small women's division featuring female performers such as Combat Toyoda and Megumi Kudo. Toyoda and Kudo would go on and headline one of FMW's largest cards in an "Exploding No Rope Barbed Wire Deathmatch." By 2005, both all-female major federations (AJW and Gaea Japan) had closed, but female wrestlers still compete in various other smaller, independent promotions.

There are several other promotions where women's wrestling is still presented and promoted which focuses on emphasis on athleticism and wrestling ability. In the US, Shimmer Women Athletes is an all-female pro-wrestling promotion affiliated with notable independent promotion Ring of Honor, and considered on par with male wrestling. In Mexico, though rarely as prominent as their American, Canadian or Japanese counterparts, female wrestlers or *luchadoras* have always been popular and highly respected, and many went on to compete overseas. In Europe, ChickFight and Queens of Chaos are the leading companies for women's professional wrestling in the United Kingdom and France respectively, again considered on par if not superior to male wrestling.
Inter gender wrestling

For most of its history, women and men would rarely compete against each other in professional wrestling, as it was deemed to be unfair and unchivalrous. Andy Kaufman used this to gain notoriety when he created an Intergender Championship and declared it open to any female challenger. This led to a long feud with Jerry Lawler.

In the 1980s, mixed tag team matches began to take place, with a male and female on each team and a rule that stated only the males and females could attack each other. If a tag was made, the other team had to automatically switch their legal wrestler too. Despite these restrictions, many mixed tag matches do feature some physical interaction between participants of different genders. For example, a heel may take a cheapshot at the female wrestler of the opposing team to draw a negative crowd reaction.

Intergender singles bouts were first fought on a national level in the 1990s. This began with Luna Vachon, who faced men (and usually defeated them) in both ECW and WWF. Later, Chyna became the first female to hold a belt that was not exclusive to women when she won the WWF Intercontinental Championship.

Midget wrestling

Midget wrestling can be traced to professional wrestling's carnival and vaudeville origins. In recent years, the popularity and prevalence of midgets in wrestling has greatly decreased due to wrestling companies depriving midget divisions of storyline and/or feud. However, WWE's has made a few attempts to enter this market with their "mini's" in the 1990s and the "junior's league" as recent as 2006. It is still a popular form of entertainment in Mexican wrestling, mostly as a "sideshow."

Some wrestlers may have their own specific "mini me", like Mascarita Sagrada, Alebrije has Quije, etc. There are also cases in which midgets can become valets for a wrestler, and even get physically involved in matches, like Alushe, who often accompanies Tinieblas, or Kemonito, who is portrayed as Consejo Mundial de Lucha Libre's mascot and is also a valet for Mistico. World Wrestling Entertainment's Dave Finlay was often aided in his matches by a midget known
mainly as Hornswoggle, who hid under the ring and gave a shillelagh to Finlay to use on his opponent. Finlay also occasionally threw him at his opponent(s). Hornswoggle has also been given a run with the Cruiserweight Championship.

**Styles and characteristics of professional wrestling in different countries**

The U.S., Japan and Mexico are three countries where there is a huge market and high popularity for professional wrestling. But the styles of professional wrestling are different, given their independent development for a long period.

The professional wrestling in the U.S. tends to have heavy focus on story building and characters establishment. There is a story for each match, and even a longer story for successive matches. The stories usually contain characters like faces and heels, and less often antiheroes and tweeners. It is a "triumph" if the face wins, while it is a "tragedy" if the heel wins. The characters usually have strong and sharp personalities, with examples like Doink the Clown, whose personality is regarded as unrealistic. The opposition between faces and heels is very intense in the story, and the heels may even attack the faces during TV interviews. The relationship between different characters can also be very complex.

Although professional wrestling in Mexico (Lucha libre) also has stories and characters, they are less emphasized. Wrestlers in Mexico are traditionally more agile and perform more aerial maneuvers than professional wrestlers in the U.S. who, more often, rely on power moves and strikes to subdue their opponents. The difference in styles is due to the independent evolution of the sport in Mexico beginning in the 1930s and the fact that wrestlers in the cruiserweight division (*peso semicompleto*) are often the most popular wrestlers in Mexican lucha libre. Wrestlers often execute high flying moves characteristic of lucha libre by utilizing the wrestling ring's ropes to catapult themselves towards their opponents, using intricate combinations in rapid-fire succession, and applying complex submission holds. Lucha libre is also known for its tag team wrestling matches, in which the teams are often made up of three members, instead of two as is common in the U.S.

The style of Japanese professional wrestling (Puroresu) is again different. With its origins in traditional American style of wrestling and still being under the same genre, it has become an
entity in itself.[10] Despite the similarity to its American counterpart in that the outcome of the matches remains predetermined, the phenomena are different in the form of the psychology and presentation of the sport; it is treated as a full contact combat sport as it mixes hard hitting martial arts strikes with shoot style submission holds,[11] while in the U.S. it is rather more regarded as an entertainment show. Wrestlers incorporate kicks and strikes from martial arts disciplines, and a strong emphasis is placed on submission wrestling. Many of Japan's wrestlers including top stars such as Shinya Hashimoto, Riki Choshu and Keiji Mutoh came from a legitimate martial arts background.

**Culture**

Professional wrestling has developed its own cultures, both internal and external.

Those involved in producing professional wrestling have developed a kind of global fraternity, with familial bonds, shared language and passed-down traditions. New performers are expected to "pay their dues" for a few years by working in lower-profile promotions and working as ring crew before working their way upward. The permanent rosters of most promotions develop a backstage pecking order, with veterans mediating conflicts and mentoring younger wrestlers. For many decades (and still to a lesser extent today) performers were expected to keep the illusions of wrestling's legitimacy alive even while not performing, essentially acting in character any time they were in public. Some veterans speak of a "sickness" among wrestling performers, an inexplicable pull to remain active in the wrestling world despite the devastating effects the job can have on one's life and health.

Fans of professional wrestling have their own subculture, comparable to those of science fiction, video games or comic books. Those who are interested in the backstage occurrences, future storylines and reasonings behind company decisions read newsletters written by journalists with inside ties to the wrestling industry. These "rags" or "dirt sheets" have expanded into the internet, where their information can be dispensed on an up-to-the-minute basis. Some have expanded into radio shows.

Some fans enjoy a pastime of collecting tapes of wrestling shows from specific companies, of certain wrestlers, or of specific genres. The internet has given fans exposure to worldwide
variations of wrestling they would be unable to see otherwise. Since the 1990s, many companies have been founded which deal primarily in wrestling footage.

Like some other sports, fantasy leagues have developed around professional wrestling. Some take this concept further by creating E-feds (electronic federations), where a user can create their own fictional wrestling character, and roleplaying storylines with other users, leading to scheduled "shows" where match results are determined by the organizers, usually based on a combination of the characters' statistics and the players' roleplaying aptitude, sometimes with audience voting.

Every year, there are growing numbers of regional, national and international wrestling fan conventions, where fans can meet and converse with wrestlers and each other. These often coincide with a wrestling show featuring an all-star card filled with legends.

**Professional wrestling in mainstream culture**

From the first established world championship, the top professional wrestlers have garnered fame within mainstream society. Each successive generation has produced a number of wrestlers who extend their careers into the realms of music, acting, writing, business, politics or public speaking, and are known to those who are unfamiliar with wrestling in general.

Conversely, celebrities from other sports or general pop culture also become involved with wrestling for brief periods of time. A prime example of this is The Rock 'n' Wrestling Connection of the 1980s, which combined wrestling with MTV.

Professional wrestling is often portrayed within other works using parody, and its general elements have become familiar tropes and memes in American culture.

Some terminology originating in professional wrestling has found its way into the common vernacular. Concepts such as "cage match", "body slam", "sleeper hold" and "tag team" are used even by those who do not watch professional wrestling. The term "smackdown", which originated in the late 90s in the World Wrestling Federation, is now listed in Webster's Dictionary as of 2007.
Many television shows and films have been produced which portray in-character professional wrestlers as protagonists, such as Ready to Rumble, ¡Mucha Lucha!, Nacho Libre, and the Santo film series. At least two stage plays set in the world of pro wrestling have been produced: The Baron is a comedy that retells the life of an actual performer known as Baron von Raschke. From Parts Unknown... is an award-nominated Canadian drama about the rise and fall of a fictional wrestler. In 2009 a South Park episode played on the soap operatic elements of professional wrestling. The critically-acclaimed 2008 film The Wrestler, starring Mickey Rourke as a washed-up professional wrestler, garnered several Oscar nominations.

Select active wrestling promotions

**Major Organizations** (Professional Wrestling in U.S.)

- World Wrestling Entertainment (WWE)
- Total Nonstop Action Wrestling (TNA)
- Ring of Honor (ROH)

**Independent Organizations** (Professional Wrestling in U.S.)

- All Pro Wrestling (APW)
- Chikara
- Combat Zone Wrestling (CZW)
- Dragon Gate USA (DGUSA)
- Empire Wrestling Federation (EWF)
- Florida Championship Wrestling (FCW)
- Full Impact Pro (FIP)
- Jersey All Pro Wrestling (JAPW)
- Juggalo Championship Wrestling (JCW)
- Maryland Championship Wrestling (MCW)
- Northern Wrestling Federation (NWF)
- Ohio Valley Wrestling (OVW)
- Pro Wrestling Guerrilla (PWG)
- Shimmer Women Athletes
- World Wrestling Professionals (WWP)

**Puroresu** (Professional Wrestling in Japan)

- All Japan Pro Wrestling (AJPW)
- New Japan Pro Wrestling (NJPW)
- Big Japan Pro Wrestling (BJW)
- Pro Wrestling Noah
- Pro Wrestling Zero1
- Pancrase
- Michinoku Pro Wrestling
- IWA Japan
- BattlARTS
- DDT
- Osaka Pro Wrestling
- K-DOJO
- Dragon Gate
- Big Mouth Loud
- El Dorado Wrestling
- Chikara

**Lucha Libre** (Professional Wrestling in Mexico)

- Asistencia Asesoría y Administración (AAA)
- Consejo Mundial de Lucha Libre (CMLL)
- International Wrestling Revolution Group (IWRG)

**Lucha Libre** (Professional Wrestling in the Dominican Republic)

- Dominican Wrestling Entertainment (DWE)
- Caribbean Wrestling Entertainment
- Dominicana de Espectaculos
Study and analysis of professional wrestling

With its growing popularity, professional wrestling has attracted attention as a subject of serious academic study and journalistic criticism. Many courses, theses, essays and dissertations have analyzed wrestling's conventions, content, and its role in modern society. It is often included as part of studies on theatre, sociology, performance, and media. The Massachusetts Institute of Technology developed a course of study on the cultural significance of professional wrestling.

But this was not always the case; in the early 20th century, once it became apparent that the "sport" was worked, pro wrestling was looked down on as a cheap entertainment for the uneducated working class an attitude that still exists to varying degrees today. The French theorist Roland Barthes was among the first to propose that wrestling was worthy of deeper analysis, in his essay "The World of Wrestling" from his book Mythologies, first published in 1957.[15][22] Barthes argued that it should be looked at not as a scamming of the ignorant, but as spectacle; a mode of theatric performance for a willing, if bloodthirsty, audience. This work is considered a foundation of all later study.

While pro wrestling is often described simplistically as a "soap opera for males", it has also been cited as filling the role of past forms of literature and theatre; a synthesis of classical heroics, commedia dell'arte, revenge tragedies, morality plays, and burlesque.[27] The characters and storylines portrayed by a successful promotion are seen to reflect the current mood, attitudes, and concerns of that promotion's society (and can, in turn, influence those same things). Wrestling's high levels of violence and masculinity make it a vicarious outlet for aggression during peacetime.

Documentary filmmakers have studied the lives of wrestlers and the effects the profession has on themselves and their families. The 1999 theatrical documentary Beyond the Mat focused on Terry Funk, a wrestler nearing retirement; Mick Foley, a wrestler within his prime; Jake Roberts, a former star fallen from grace; and a school of wrestling students trying to break into the business. The 2005 release Lipstick and Dynamite, Piss and Vinegar: The First Ladies of Wrestling chronicled the development of women's wrestling throughout the twentieth century. Pro wrestling has been featured several times on HBO's Real Sports with Bryant Gumbel. MTV’s
documentary series True Life featured two episodes titled "I'm a Professional Wrestler" and "I Want to Be a Professional Wrestler". Other documentaries have been produced by The Learning Channel (The Secret World of Professional Wrestling) and A&E Network (Hitman Hart: Wrestling with Shadows). Bloodstained Memoirs explored the careers of several pro wrestlers, including Chris Jericho, Rob Van Dam and Roddy Piper.

Mixed martial arts competition

Motif on a Greek commemorative coin. A waist-hold is applied to a wrestler in preparation of throwing him down to the ground. In the background, two ancient athletes are pictured in a stance known as akrocheirismos (finger-hold) with their heads pushing against each other's.

Grappling and striking skills are both of importance in mixed martial arts competitions. Fighters who were accomplished wrestlers, gained respect during the early stages of MMA development. Successful fighters in modern MMA who began their training in various forms of wrestling, include Brock Lesnar, the current UFC heavyweight champion who was a NCAA wrestling champion in 2000 and achieved 2nd place 1999, and former champions Dan Henderson, of PRIDE FC and Randy Couture, a multi-time UFC champion, both of whom competed extensively in collegiate and Greco-Roman wrestling before beginning their careers in mixed martial arts.
Intelligence

Intelligence is an umbrella term used to describe a property of the mind that encompasses many related abilities, such as the capacities to reason, to plan, to solve problems, to think abstractly, to comprehend ideas, to use language, and to learn. There are several ways to define intelligence. In some cases, intelligence may include traits such as creativity, personality, character, knowledge, or wisdom. However, most psychologists prefer not to include these traits in the definition of intelligence.

Theories of intelligence can be divided into those based on a unilinear construct of general intelligence and those based on multiple intelligences. Francis Galton, influenced by his cousin Charles Darwin, was the first to advance a theory of general intelligence. For Galton, intelligence was a real faculty with a biological basis that could be studied by measuring reaction times to certain cognitive tasks. Galton's research on measuring the head size of British scientists and ordinary citizens led to the conclusion that head size had no relationship with the person's intelligence.

Alfred Binet

Alfred Binet (July 8, 1857 – October 18, 1911), French psychologist and inventor of the first usable intelligence test, the basis of today's IQ test. His principal goal was to identify students who needed special help in coping with the school curriculum. Along with his collaborator Théodore Simon, Binet published revisions of his intelligence scale in 1908 and 1911, the last appearing just before his untimely death. A further refinement of the Binet-Simon scale was published in 1916 by Lewis M. Terman, from Stanford University, who incorporated William Stern's proposal that an individual's intelligence level be measured as an (I.Q.). Terman's test, which he named the Stanford-Binet Intelligence Scale formed the basis for one of the modern intelligence tests still commonly used today. They are all colloquially known as IQ tests.

Early Years

Binet was born as Alfredo Binetti in Nice, at the time part of the Kingdom of Sardinia. He was the only child of a physician father and an artist mother. His parents separated when he was
young, and Binet then moved to Paris with his mother. He attended law school, and earned his degree in 1878. He planned on going to medical school, but decided that his interest in psychology was more important.

Reading books by Charles Darwin, Alexander Bain and others, Binet became a somewhat self-taught psychologist. Introverted and a loner, this self-educating suited him. What he did not realize was that he would later pay, because of what he was deprived of by not attending a University and formally studying psychology.

Binet published the first modern intelligence test, the Binet-Simon intelligence scale, in 1905.

**Binet and Chess**

In 1894, Binet conducted one of the first psychological studies into chess. It investigated the cognitive facilities of chess masters. Binet hypothesized that chess depends upon the phenomenological qualities of visual memory but after studying the reports by master participants, it was concluded that memory was only part of the chain of cognition involved in the game process. The players were blindfolded and required to play the game from memory. It was found that only masters were able to play successfully without seeing the board for a second time and that amateur or intermediate players found it to be an impossible task. It was further concluded that experience, imagination, and memories of abstract and concrete varieties were required in grand master chess. The line of psychological chess research was followed up in the 1950s by Reuben Fine and in the 1960s by Adriaan de Groot.

**Later career and the Binet - Simon test**

In 1899, Binet was asked to be a member of the Free Society for the Psychological Study of the Child. French education changed profusely during the end of the nineteenth century, because of a law that passed which made it mandatory for children ages six to fourteen to attend school. This group to which Binet became a member hoped to begin studying children in a scientific manner. Binet and many other members of the society were appointed to the Commission for the Retarded. The question became "What should be the test given to children thought to possibly have learning disabilities, that might place them in a special classroom?" Binet made it his
problem to establish the differences that separate the normal child from the abnormal, and to measure such differences. L'Etude experimentale de l'intelligence (Experimental Studies of Intelligence) was the book he used to describe his methods and it was published in 1903.

Development of more tests and investigations began soon after the book, with the help of a young medical student named Theodore Simon. Simon had nominated himself a few years before as Binet's research assistant and worked with him on the intelligence tests that Binet is known for, which share Simon's name as well. In 1905, a new test for measuring intelligence was introduced and simply called the Binet–Simon scale. In 1908, they revised the scale, dropping, modifying, and adding tests and also arranging them according to age levels from three to thirteen.

In 1904 a French professional group for child psychology, La Société Libre pour l'Etude Psychologique de l'Enfant, was called upon by the French government to appoint a commission on the education of retarded children. The commission was asked to create a mechanism for identifying students in need of alternative education. Binet, being an active member of this group, found the impetus for the development of his mental scale.

Binet and Simon, in creating what historically is known as the Binet-Simon Scale, comprised a variety of tasks they thought were representative of typical children's abilities at various ages. This task-selection process was based on their many years of observing children in natural settings. They then tested their measurement on a sample of fifty children, ten children per five age groups. The children selected for their study were identified by their school teachers as being average for their age. The purpose of this scale of normal functioning, which would later be revised twice using more stringent standards, was to compare children's mental abilities relative to those of their normal peers (Siegler, 1992).

The scale consisted of thirty tasks of increasing complexity. The easiest of these could be accomplished by all children, even those who were severely retarded. Some of the simplest test items assessed whether or not a child could follow a lighted match with his eyes or shake hands with the examiner. Slightly harder tasks required children to point to various named body parts, repeat back a series of 3 digits, repeat simple sentences, and to define words like house, fork or
mama. More difficult test items required children to state the difference between pairs of things, reproduce drawings from memory or to construct sentences from three given words such as "Paris, river and fortune." The hardest test items included asking children to repeat back 7 random digits, find three rhymes for the French word obéissance and to answer questions such as "My neighbor has been receiving strange visitors. He has received in turn a doctor, a lawyer, and then a priest. What is taking place?" (Fancher, 1985).

For the practical use of determining educational placement, the score on the Binet-Simon scale would reveal the child's mental age. For example, a 6 year-old child who passed all the tasks usually passed by 6 year-olds--but nothing beyond--would have a mental age that exactly matched his chronological age, 6.0. (Fancher, 1985).

Binet was forthright about the limitations of his scale. He stressed the remarkable diversity of intelligence and the subsequent need to study it using qualitative, as opposed to quantitative, measures. Binet also stressed that intellectual development progressed at variable rates and could be influenced by the environment; therefore, intelligence was not based solely on genetics, was malleable rather than fixed, and could only be found in children with comparable backgrounds (Siegler, 1992). Given Binet's stance that intelligence testing was subject to variability and was not generalizable, it is important to look at the metamorphosis that mental testing took on as it made its way to the U.S.

While Binet was developing his mental scale, the business, civic, and educational leaders in the U.S. were facing issues of how to accommodate the needs of a diversifying population, while continuing to meet the demands of society. There arose the call to form a society based on meritocracy (Siegler,1992) while continuing to underline the ideals of the upper class. In 1908, H.H. Goddard, a champion of the eugenics movement, found utility in mental testing as a way to evidence the superiority of the white race. After studying abroad, Goddard brought the Binet-Simon Scale to the United States and translated it into English.

Following Goddard in the U.S. mental testing movement was Lewis Terman who took the Simon-Binet Scale and standardized it using a large American sample. The new Standford-Binet scale was no longer used solely for advocating education for all children, as was Binet's
objective. A new objective of intelligence testing was illustrated in the Stanford-Binet manual with testing ultimately resulting in "curtailing the reproduction of feeble-mindedness and in the elimination of an enormous amount of crime, pauperism, and industrial inefficiency (p.7)"


It follows that we should question why Binet did not speak out concerning the newfound uses of his measure. Siegler (1992) pointed out that Binet was somewhat of an isolationist in that he never traveled outside of France and he barely participated in professional organizations. Additionally, his mental scale was not adopted in his own country during his lifetime and therefore was not subjected to the same fate. Finally, when Binet did become aware of the "foreign ideas being grafted on his instrument" he condemned those who with 'brutal pessimism' and 'deplorable verdicts' were promoting the concept of intelligence as a single, unitary construct (White, 2000).

From 1905 to 1908, Binet and Simon developed a test primarily for kids ages 3 to 15 that would compare their intellectual capabilities to other children of the same age. He did a lot of trial and error testing with students from his area. Binet studied groups of “normal” children, and also children who were mentally challenged. He had to figure out which tasks each group of students was able to complete, and what would be considered standard in the groups. The tests were held between one interviewer and one student, and determined what level of intellectual thinking the student had achieved. The invention of the intelligence test was extremely important to the field of education.

Binet published the third version of the Binet-Simon scale right before he died in 1911, but it was still unfinished. If it were not for his early death, Binet surely would have continued to revise the scale. Still, the Binet-Simon scale was and is hugely popular around the world, mainly because it is easy to give and fairly brief.

Since his death, many people in many ways have honored Binet, but two of these stand out. In 1917, the Free Society for the Psychological Study of the Child, to whom Binet became a
member in 1899 and which prompted his development of the intelligence tests, changed their name to La Societe Alfred Binet, in memory of the renowned psychologist. The second honor was not until 1984, when the journal Science 84 picked the Binet-Simon scale, as one of twenty of this century's most significant developments or discoveries.

He studied sexual behavior, coining the term erotic fetishism to describe individuals whose sexual interests in nonhuman objects, such as articles of clothing. He also studied abilities of Valentine Dencausse, the most famous chiromancer in Paris in those days.

Alfred Binet and the French school of intelligence believed that intelligence was an average of numerous dissimilar abilities, rather than a unitary entity with specific identifiable properties. The Stanford-Binet intelligence test has been used by both theorists of general intelligence and multiple intelligence.

**Stanford-Binet Intelligence Scales**

The development of the *Stanford-Binet Intelligence Scales* initiated the modern field of intelligence testing. The Stanford-Binet test started with the French psychologist Alfred Binet, whom the French government commissioned with developing a method of identifying intellectually deficient children for their placement in special education programs. As Binet indicated, case studies might be more detailed and helpful, but the time required to test many people would be excessive.

**Development**

Later, Alfred Binet and physician Theodore Simon collaborated in studying mental retardation in French school children. Theodore Simon was a student of Binet's. Between 1905 and 1908, their research at a boys school, in Grange-aux-Belles, led to their developing the *Binet-Simon tests*; via increasingly difficult questions, the tests measured attention, memory, and verbal skill. Binet warned that such test scores should not be interpreted literally, because intelligence is plastic and that there was a margin of error inherent to the test (Fancher, 1985). The test consisted of 30 items ranging from the ability to touch one's nose or ear when asked to the ability to draw designs from memory and to define abstract concepts. Binet proposed that a child's intellectual
ability increases with age. Therefore, he tested potential items and determined that age at which a
typical child could answer them correctly. Thus, Binet developed the concept of mental age (MA), which is an individual's level of mental development relative to others.

In 1916, the Stanford psychologist Lewis Terman released the "Stanford Revision of the Binet-
Simon Scale", the "Stanford-Binet", for short. Helped by graduate students and validation
experiments, he removed some Binet-Simon test items and added new ones. Soon, the test was
so popular that Robert Yerkes, the president of the American Psychological Association, decided
to use it in developing the Army Alpha and the Army Beta tests to classify recruits. Thus, a high-
scoring recruit might earn an A-grade (high officer material), whereas a low-scoring recruit with
an E-grade would be rejected for military service. (Fancher, 1985).

**Present use**

Since the inception of the Stanford-Binet, it has been revised several times. Currently, the test is
in its fifth edition, which is called the Stanford-Binet 5. According to the publisher's website,
"The SB5 was normed on a stratified random sample of 4,800 individuals that matches the 2000
U.S. Census. Bias reviews were conducted on all items for gender, ethnic, cultural/religiosity,
regional, and socioeconomic status issues. Validity data was obtained using such instruments as
the Stanford-Binet Intelligence Scale, Fourth Edition, the Stanford-Binet Form L-M, the
Woodcock-Johnson III, the Universal Nonverbal Intelligence Test, the Bender-Gestalt, the
WAIS-III, the WIAT-II, the WISC-III, and the WPPSI-R."

Low variation on individuals tested more than once indicates the test has high reliability,
although its validity is debated (see below). In 1985, the test was revised to analyze an
individual's responses in four content areas: verbal reasoning, quantitative reasoning,
abstract/visual reasoning, and short term memory. A general composite score also is obtained.
Today the test is scored by comparing how the test taker performs compared with other people of
the same age. The five factors assessed in the test are: Fluid Reasoning, Knowledge, Quantitative
Reasoning, Visual-Spatial Processing, and Working Memory. Each is assessed in two separate
domains, verbal and nonverbal, in order to accurately assess individuals with deafness, limited
English, or communication disorders. Examples of test items include verbal analogies to test
Verbal Fluid Reasoning and picture absurdities to test Nonverbal Knowledge. The test makers state that the Stanford-Binet 5 accurately assesses low-functioning, normal intelligence, and high-functioning individuals (Riverside Publishing, 2004).

Students with exceptional scores on this test may be deemed bright, moderately gifted, highly gifted, extremely gifted, or profoundly gifted (contrast these with obsolete terms for low scores). These terms equate with progressively further standard deviations of IQ scores from the mean (100), bright being 1 standard deviation, moderately gifted 2 standard deviations, etc. Mensa currently requires a score of 132 on the Stanford-Binet. Since the test has a standard deviation of 15 (Roid, 2003)[2], this corresponds to 2 standard deviations above the mean in a normally distributed population. The Triple Nine Society currently requires a score of 146 on the SB-5 version, and 149 on all others. By administering the Stanford-Binet test to large numbers of individuals selected at random from different parts of the United States, it has been found that the scores approximate a normal distribution. The Stanford-Binet continues to be one of the most widely used individual tests of intelligence.

**Criticisms**

The validity of standardized tests such as Stanford-Binet for testing general intelligence has been disputed by a number of commentators. Stephen Jay Gould points out in his book The Mismeasure of Man that Binet originally devised his test for detecting problem areas, rather than as a means of ranking the general intelligence of students. Over time, the purposes of intelligence testing have changed, however, and the Stanford-Binet 5, the 5th revision of Binet's test, now bears little resemblance to his original work. Achievement tests, rather than intelligence tests, are now typically used to assess performance in particular areas.

As Brown & French point out, "IQ tests serve one function exceptionally well, they predict academic success or failure ... they are composed of items that are representative of the kinds of problems that traditionally dominate school curricula," (1979: 255) and thus only predict that category of school assimilation. Further, "children with the same current status on an IQ test item may vary quite widely in terms of their cognitive potential." (ibid.: 258)
Definitions

Intelligence comes from the Latin verb intellegere, which means "to understand". By this rationale, intelligence (as understanding) is arguably different from being "smart" (able to adapt to one's environment). At least two major "consensus" definitions of intelligence have been proposed. First, from Intelligence: Knowns and Unknowns, a report of a task force convened by the American Psychological Association in 1995:

Individuals differ from one another in their ability to understand complex ideas, to adapt effectively to the environment, to learn from experience, to engage in various forms of reasoning, to overcome obstacles by taking thought. Although these individual differences can be substantial, they are never entirely consistent: a given person’s intellectual performance will vary on different occasions, in different domains, as judged by different criteria. Concepts of "intelligence" are attempts to clarify and organize this complex set of phenomena. Although considerable clarity has been achieved in some areas, no such conceptualization has yet answered all the important questions and none commands universal assent. Indeed, when two dozen prominent theorists were recently asked to define intelligence, they gave two dozen somewhat different definitions.

A second definition of intelligence comes from "Mainstream Science on Intelligence", which was signed by 52 intelligence researchers in 1994:

A very general mental capability that, among other things, involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience. It is not merely book learning, a narrow academic skill, or test-taking smarts. Rather, it reflects a broader and deeper capability for comprehending our surroundings—"catching on", "making sense" of things, or "figuring out" what to do.

Another simple and efficient definition is: the ability to apply knowledge in order to perform better in an environment.

Researchers in the fields of psychology and learning have also defined human intelligence:
A mathematical definition of "intelligence" (using notions from computer science) was put forward by Marcus Hutter in his book Universal Artificial Intelligence (Springer 2005). Essentially the same idea as Hutter's, but coming at it from a different angle and with different terminology, was put forward independently by Warren D. Smith in 2006. One may read about it in paper #93 on his web page. Mathematical definitions have, as one advantage, that they could be applied to nonhuman intelligences and in the absence of human testers. The Hutter/Smith picture has a number of interesting consequences such as the theorem that "universal" intelligences exist which can emulate any other (Smith calls this a "UACI" and human minds are speculated to be based on the same principles of operation as UACIs); that there are ways of creating quantitative "intelligence tests" which should enable serving as an objective gauge of progress in [artificial intelligence].

**Theories of intelligence**
The most widely accepted theory of intelligence is based on psychometrics testing or intelligence quotient (IQ) tests. However, dissatisfaction with traditional IQ tests has led to the development of a number of alternative theories, all of which suggest that intelligence is the result of a number of independent abilities that uniquely contribute to human performance.

General intelligence factor

The general intelligence factor (abbreviated g) is a controversial construct used in the field of psychology (see also psychometrics) to quantify what is common to the scores of all intelligence tests.

An illustration of Spearman's two-factor intelligence theory. Each small oval is a hypothetical mental test. The blue areas show the variance attributed to s, and the purple areas the variance attributed to g.

Charles Spearman, an early psychometrician, found that schoolchildren's grades across seemingly unrelated subjects were positively correlated, and proposed that these correlations reflected the influence of a dominant factor, which he termed g for "general" intelligence. He developed a model where all variation in intelligence test scores can be explained by two factors. The first is the factor specific to an individual mental task: the individual abilities that would make a person more skilled at one cognitive task than another. The second is g, a general factor that governs performance on all cognitive tasks.

The accumulation of cognitive testing data and improvements in analytical techniques have preserved g's central role and led to the modern conception of g. A hierarchy of factors with g at its apex and group factors at successively lower levels, is espoused to be the most widely accepted model of cognitive ability. Other models have also been proposed, and significant controversy attends g and its alternatives.
Mental testing and g

The abstraction of g stems from the observation that scores on all forms of cognitive tests correlate positively with one another. g can be derived as the principal factor from cognitive test scores using the method of principal components analysis or factor analysis.

The relationship of g to intelligence tests may be more readily understood with an analogy. Irregular objects, such as the human body, are said to vary in "size". Yet no single measurement of a human body is obviously preferred to measure its "size". Instead, many and various measurements, such as those taken by a tailor, may be made. All of these measurements will be positively correlated with each other, and if one were to "add up" or combine all of the measurements, the aggregate would give a better description of an individual's size than any single measurement. The method of factor analysis allows this. The process is intuitively similar to taking the average of a sample of measurements of a single variable, but instead "size" is a summary measure of a sample of variables. g is like size, in that it is abstracted from various measures (of cognitive ability). Of course, variation in "size" does not fully account for all variation in the measurements of a human body. Factor analysis techniques are not limited to producing single factors, and an analysis of human bodies might produce (for example) two major factors, such as height and girth. However, the scores of tests of cognitive ability do in fact produce a primary dominant factor, g.

Tests of cognitive ability derive most of their validity from the extent to which they measure g. If quantifiable measures of the performance of a task correlate highly with g, it is said to be g-loaded. Creators of IQ tests, whose goals are generally to create highly reliable and valid tests, have thus made their tests as g-loaded as possible. Historically, this has meant dampening the influence of group factors by testing as wide a range of mental tasks as possible. However, tests such as Raven's Progressive Matrices are considered to be the most g - loaded in existence, even though Raven's is quite homogeneous in the types of tasks comprising it.

Elementary cognitive tasks (ECTs) also correlate strongly with g. ECTs are, as the name suggests, simple tasks that apparently require very little intelligence, but still correlate strongly with more exhaustive intelligence tests. Determining whether a light is red or blue and
determining whether there are four or five squares drawn on a computer screen are two examples of ECTs. The answers to such questions are usually provided by quickly pressing buttons. Often, in addition to buttons for the two options provided, a third button is held down from the start of the test. When the stimulus is given to the subject, he removes his hand from the starting button to the button of the correct answer. This allows the examiner to determine how much time was spent thinking about the answer to the question (reaction time, usually measured in small fractions of second), and how much time was spent on physical hand movement to the correct button (movement time). Reaction time correlates strongly with g, while movement time correlates less strongly. ECT testing has allowed quantitative examination of hypotheses concerning test bias, subject motivation, and group differences. By virtue of their simplicity, ECTs provide a link between classical IQ testing and biological inquiries such as fMRI studies.

**Biological and genetic correlates of g**

g has a large number of biological correlates. Strong correlates include mass of the prefrontal lobe, overall brain mass, and glucose metabolism rate within the brain. g correlates less strongly, but significantly, with overall body size. There is conflicting evidence regarding the correlation between g and peripheral nerve conduction velocity, with some reports of significant positive correlations, and others of no or even negative correlations.

Current research suggests that the heritability of g is approximately .85 - even higher than that for IQ itself - so the heritability of most test performance is thus attributable to g.

Brain size has long been known to be correlated with g. Recently, an MRI study on twins showed that frontal gray matter volume was highly significantly correlated with g and highly heritable. A related study has reported that the correlation between brain size (reported to have a heritability of 0.85) and g is 0.4, and that correlation is mediated entirely by genetic factors. g has been observed in mice as well as humans.

Lehrl and Fischer (1990) have claimed that g is limited by the channel capacity of short-term memory. Mental power, or the capacity $C$ of short-term memory (measured in bits of information), is the product of the individual mental speed $C_k$ of information processing (in bit/s) (see the external link below to the paper by Lehrl and Fischer), and the duration time D
(in s) of information in short-term working memory, meaning the duration of memory span. Hence:

\[ C \text{ (bit)} = C_k \text{(bit/s)} \times D \text{ (s)}. \]

This theory has been tested and found wanting by Roberts et al. (1992).[10] There is much evidence that \( g \) is closely related to measures of the capacity of working memory but this capacity cannot be measured in bits of information.

However, recent studies attempting to find regions in the genome relating to intelligence have had little success. A recent study used several hundred people in two groups, one with a very high IQ, average 160, and a control group with an average IQ of 102. The study used 1,842 DNA markers and put them through a five-step inspection process to eliminate false positives. By the fifth step, the study could not find a single gene that was related to intelligence. Critics of these studies say the failure to find a specific gene associated with intelligence is indicative of the complex nature of intelligence. They contend that intelligence is probably under the influence of several genes. Some estimate that as much as 40% of the genome may contribute to intelligence.

**Social correlates of \( g \)**

Most measures of \( g \) positively correlate with conventional measures of success (income, academic achievement, job performance, career prestige) and negatively correlate with what are generally seen as undesirable life outcomes (school dropout, unplanned childbearing, poverty). IQ tests that measure a wide range of abilities do not predict much better than \( g \). Scientific publishings of findings of differences in \( g \) between ethnic groups have sparked public controversy.

**The Flynn effect and \( g \)**

The Flynn effect describes a rise in IQ scores over time. There is no strong consensus as to whether rising IQ scores also reflect increases in \( g \). In addition, there is recent evidence that the tendency for intelligence scores to rise has ended in some first-world countries. Statistical analyses of IQ subtest scores suggest a \( g \)-independent input to the Flynn effect.
Challenges to g

In 1981, the late Stephen Jay Gould, a paleontologist, voiced his objections to the concept of g, as well as intelligence testing in general, in his controversial book The Mismeasure of Man. In 1985, the British philosopher Philip Kitcher wrote that "Many scientists are now convinced that there is no single measure of intellectual ability" and that "it is useful to continue to expose the myth of "general intelligence". Some researchers in artificial intelligence have argued that the science of mental ability can be thought of as "computationalism" and is "either silly or pointless," noting, "Mental ability tests measure differences in tasks that will soon be performed for all of us by computational agents." And intelligence theorist Howard Gardner also has written that he does not believe "that there is a single general talent, whether it be called intelligence, creativity or 'g'." In 2005, Wendy Johnson and Thomas Bouchard investigated the structure of mental ability by administering 42 diverse tests of mental ability to 436 adults. The tests included "different uses" (generation of novel uses for specified objects), "object assembly" (reassemble of cut-up figures), "verbal—proverbs" (interpretation of proverbs) and "mechanical ability" (identification of mechanical principles and tools); factor analysis found a clear single higher order factor, g. In their report, published in the journal Intelligence, the study authors conclude:

In combination with our earlier findings regarding the consistency of general intelligence factors across test batteries, our results point unequivocally to the existence of a general intelligence factor contributing substantively to all aspects of intelligence.\(^{[22]}\)

Savant syndrome

Howard Gardner contends that the rare condition of savant syndrome argues against a single generalized intelligence. People with savant syndrome may have general IQs in the mentally retarded range but may possess certain mental abilities that are remarkable compared to the average person. These abilities include superior memory, lightning-fast arithmetic calculation, advanced musical ability, rapid language learning and exceptional artistic ability. On the other hand, Gardner's contention is rebutted by the fact that savants with low IQs tend to perform poorly in school and at work, despite their talents. This outcome is in line with the predictions made by modern IQ tests (see "Social Correlates of g", above).
Intelligence quotient

An intelligence quotient, or IQ, is a score derived from one of several different standardized tests attempting to measure intelligence. The term "IQ," from the German Intelligenz-Quotient, was coined by the German psychologist William Stern in 1912 as a proposed method of scoring early modern children's intelligence tests such as those developed by Alfred Binet and Théodore Simon in the early 20th Century. Although the term "IQ" is still in common use, the scoring of modern IQ tests such as the Wechsler Adult Intelligence Scale is now based on a projection of the subject's measured rank on the Gaussian bell curve with a center value (average IQ) of 100, and a standard deviation of 15, although different tests may have different standard deviations.

IQ scores have been shown to be associated with such factors as morbidity and mortality, parental social status, and to a substantial degree, parental IQ. While its inheritance has been investigated for nearly a century, controversy remains as to how much is inheritable, and the mechanisms of inheritance are still a matter of some debate.

IQ scores are used in many contexts: as predictors of educational achievement or special needs, by social scientists who study the distribution of IQ scores in populations and the relationships between IQ score and other variables, and as predictors of job performance and income.

The average IQ scores for many populations have been rising at an average rate of three points per decade since the early 20th century with most of the increase in the lower half of the IQ range: a phenomenon called the Flynn effect. It is disputed whether these changes in scores reflect real changes in intellectual abilities, or merely methodological problems with past or present testing.

History

The modern IQ score is a mathematical transformation of a raw score on an IQ test, based on the rank of that score in a normalization sample. Modern scores are sometimes referred to as "deviance IQ", while older method age-specific scores are referred to as "ratio IQ."
The two methodologies yield similar results near the middle of the bell curve, but the older ratio IQs yielded far higher scores for the intellectually gifted— for example, Marilyn vos Savant, who appeared in the Guinness Book of World Records, obtained a ratio IQ of 228. While this score could make sense using Binet's formula (and even then, only for a child), on the Gaussian curve model it would be an exceptional 7.9 standard deviations above the mean and hence virtually impossible in a population with a normal IQ distribution (see normal distribution). In addition, IQ tests like the Wechsler were not intended to discriminate reliably much beyond IQ 145, as ceiling effects become a concern.

Since the publication of the Wechsler Adult Intelligence Scale (WAIS), almost all intelligence scales have adopted the normal distribution method of scoring. The use of the normal distribution scoring method makes the term "intelligence quotient" an inaccurate description, mathematically speaking, of the intelligence measurement, but "I.Q." still enjoys colloquial usage, and is used to describe all of the intelligence scales currently in use.

**Heritability**

The role of genes and environment (nature and nurture) in determining IQ is reviewed in Plomin et al. (2001, 2003). Until recently heritability was mostly studied in children. Various studies find the heritability of IQ between 0.4 and 0.8 in the United States; that is, depending on the study, a little less than half to substantially more than half of the variation in IQ among the children studied was due to variation in their genes. The remainder was thus due to environmental variation and measurement error. A heritability in the range of 0.4 to 0.8 implies that IQ is "substantially" heritable.

The effect of restriction of range on IQ was examined by Matt McGue and colleagues, who wrote that "restriction in range in parent disinhibitory psychopathology and family SES had no effect on adoptive-sibling correlations .. IQ." On the other hand, a 2003 study by Eric Turkheimer, Andreana Haley, Mary Waldron, Brian D'Onofrio, Irving I. Gottesman demonstrated that the proportions of IQ variance attributable to genes and environment vary with socioeconomic status. They found that in impoverished families, 60% of the variance in IQ "in a
sample of 7-year-old twins" is accounted for by the shared environment, and the contribution of genes was close to zero.

It is reasonable to expect that genetic influences on traits like IQ should become less important as one gains experiences with age. Surprisingly, the opposite occurs. Heritability measures in infancy are as low as 20%, around 40% in middle childhood, and as high as 80% in adulthood. The American Psychological Association's 1995 task force on "Intelligence: Knowns and Unknowns" concluded that within the white population the heritability of IQ is "around .75." The Minnesota Study of Twins Reared Apart, a multiyear study of 100 sets of reared-apart twins which was started in 1979, concluded that about 70% of the variance in IQ was found to be associated with genetic variation. Some of the correlation of IQs of twins may be a result of the effect of the maternal environment before birth, shedding some light on why IQ correlation between twins reared apart is so robust. There are a number of points to consider when interpreting heritability:

- A high heritability does not mean that the environment has no effect on the development of a trait, or that learning is not involved. Vocabulary size, for example, is very substantially heritable (and highly correlated with general intelligence) although every word in an individual's vocabulary is learned. In a society in which plenty of words are available in everyone's environment, especially for individuals who are motivated to seek them out, the number of words that individuals actually learn depends to a considerable extent on their genetic predispositions.
- A common error is to assume that because something is heritable it is necessarily unchangeable. As previously noted, heritable traits can depend on learning, and they may be subject to other environmental effects as well. The value of heritability can change if the distribution of environments (or genes) in the population is substantially altered. For example, an impoverished or suppressive environment could fail to support the development of a trait, and hence restrict individual variation. Differences in variation of heritability are found between developed and developing nations. This could affect estimates of heritability.Another example is Phenylketonuria which previously caused mental retardation for everyone who had this genetic disorder. Today, this can be prevented by following a modified diet.
• On the other hand, there can be effective environmental changes that do not change heritability at all. If the environment relevant to a given trait improves in a way that affects all members of the population equally, the mean value of the trait will rise without any change in its heritability (because the differences among individuals in the population will stay the same). This has evidently happened for height: the heritability of stature is high, but average heights continue to increase.
• Even in developed nations, high heritability of a trait within a given group has no necessary implications for the source of a difference between groups.

Environment

Environmental factors play a role in determining IQ. Proper childhood nutrition appears critical for cognitive development; malnutrition can lower IQ.

A recent study found that the FADS2 gene, along with breastfeeding, adds about seven IQ points to those with the "C" version of the gene. Those with the "G" version of the FADS2 gene see no advantage.

Musical training in childhood also increases IQ. Recent studies have shown that training in using one's working memory may increase IQ.

Family environment

In the developed world, personality traits in some studies show that, contrary to expectations, environmental effects actually can cause non-related children raised in the same family ("adoptive siblings") to be as different as children raised in different families. There are some family effects on the IQ of children, accounting for up to a quarter of the variance, however, by adulthood this correlation approaches zero. For IQ, adoption studies show that, after adolescence, adoptive siblings are no more similar in IQ than strangers (IQ correlation near zero), while full siblings show an IQ correlation of 0.6. Twin studies reinforce this pattern: monozygotic (identical) twins raised separately are highly similar in IQ (0.86), more so than dizygotic (fraternal) twins raised together (0.6) and much more than adoptive siblings (~0.0).
Stoolmiller (1999) found that the range restriction of family environments that goes with adoption, that adopting families tend to be more similar on for example socio-economic status than the general population, means that the role of the shared family environment has been underestimated in previous studies. Corrections for range correction applied to adoption studies indicate that socio-economic status could account for as much as 50% of the variance in IQ. However, the effect of restriction of range on IQ for adoption studies was examined by Matt McGue and colleagues, who wrote that "restriction in range in parent disinhibitory psychopathology and family socio-economic status had no effect on adoptive-sibling correlations [in] IQ".

Eric Turkheimer and colleagues (2003), not using an adoption study, included impoverished US families. Results demonstrated that the proportions of IQ variance attributable to genes and environment vary non-linearly with socio-economic status. The models suggest that in impoverished families, 60% of the variance in IQ is accounted for by the shared family environment, and the contribution of genes is close to zero; in affluent families, the result is almost exactly the reverse. They suggest that the role of shared environmental factors may have been underestimated in older studies which often only studied affluent middle class families.

**Maternal (fetal) environment**

A meta-analysis, by Devlin and colleagues in Nature (1997), of 212 previous studies evaluated an alternative model for environmental influence and found that it fits the data better than the 'family-environments' model commonly used. The shared maternal (fetal) environment effects, often assumed to be negligible, account for 20% of covariance between twins and 5% between siblings, and the effects of genes are correspondingly reduced, with two measures of heritability being less than 50%.

Bouchard and McGue reviewed the literature in 2003, arguing that Devlin's conclusions about the magnitude of heritability is not substantially different from previous reports and that their conclusions regarding prenatal effects stands in contradiction to many previous reports. They write that:
Chipuer et al. and Loehlin conclude that the postnatal rather than the prenatal environment is most important. The Devlin et al. conclusion that the prenatal environment contributes to twin IQ similarity is especially remarkable given the existence of an extensive empirical literature on prenatal effects. Price (1950), in a comprehensive review published over 50 years ago, argued that almost all MZ twin prenatal effects produced differences rather than similarities. As of 1950 the literature on the topic was so large that the entire bibliography was not published. It was finally published in 1978 with an additional 260 references. At that time Price reiterated his earlier conclusion. Research subsequent to the 1978 review largely reinforces Price’s hypothesis.

**The Dickens and Flynn model**

Dickens and Flynn postulate that the arguments regarding the disappearance of the shared family environment should apply equally well to groups separated in time. This is contradicted by the Flynn effect. Changes here have happened too quickly to be explained by genetic heritable adaptation. This paradox can be explained by observing that the measure "heritability" includes both a direct effect of the genotype on IQ and also indirect effects where the genotype changes the environment, in turn affecting IQ. That is, those with a higher IQ tend to seek out stimulating environments that further increase IQ. The direct effect can initially have been very small but feedback loops can create large differences in IQ. In their model an environmental stimulus can have a very large effect on IQ, even in adults, but this effect also decays over time unless the stimulus continues (the model could be adapted to include possible factors, like nutrition in early childhood, that may cause permanent effects). The Flynn effect can be explained by a generally more stimulating environment for all people. The authors suggest that programs aiming to increase IQ would be most likely to produce long-term IQ gains if they taught children how to replicate outside the program the kinds of cognitively demanding experiences that produce IQ gains while they are in the program and motivate them to persist in that replication long after they have left the program.

**IQ and the brain**

In 2004, Richard Haier, professor of psychology in the Department of Pediatrics and colleagues at University of California, Irvine and the University of New Mexico used MRI to obtain...
structural images of the brain in 47 normal adults who also took standard IQ tests. The study demonstrated that general human intelligence appears to be based on the volume and location of gray matter tissue in the brain also demonstrated that, of the brain's gray matter, only about 6 percent appeared to be related to IQ.

Many different sources of information have converged on the view that the frontal lobes are critical for fluid intelligence. Patients with damage to the frontal lobe are impaired on fluid intelligence tests (Duncan et al. 1995). The volume of frontal grey (Thompson et al. 2001) and white matter (Schoenemann et al. 2005) have also been associated with general intelligence. In addition, recent neuroimaging studies have limited this association to the lateral prefrontal cortex. Duncan and colleagues (2000) showed using Positron Emission Tomography that problem-solving tasks that correlated more highly with IQ also activate the lateral prefrontal cortex. More recently, Gray and colleagues (2003) used functional magnetic resonance imaging (fMRI) to show that those individuals that were more adept at resisting distraction on a demanding working memory task had both a higher IQ and increased prefrontal activity. For an extensive review of this topic, see Gray and Thompson (2004).

A study involving 307 children (age between six to nineteen) measuring the size of brain structures using magnetic resonance imaging (MRI) and measuring verbal and non-verbal abilities has been conducted (Shaw et al. 2006). The study has indicated that there is a relationship between IQ and the structure of the cortex—the characteristic change being the group with the superior IQ scores starts with thinner cortex in the early age then becomes thicker than average by the late teens.¹

There is "a highly significant association" between the CHRM2 gene and intelligence according to a 2006 Dutch family study. The study concluded that there was an association between the CHRM2 gene on chromosome 7 and Performance IQ, as measured by the Wechsler Adult Intelligence Scale-Revised. The Dutch family study used a sample of 667 individuals from 304 families. A similar association was found independently in the Minnesota Twin and Family Study (Comings et al. 2003) and by the Department of Psychiatry at the Washington University.
Significant injuries isolated to one side of the brain, especially those occurring at a young age, may not significantly affect IQ.

Studies reach conflicting conclusions regarding the controversial idea that brain size correlates positively with IQ. Jensen and Reed claim no direct correlation exists in nonpathological subjects. A more recent meta-analysis suggests otherwise.

An alternative approach has sought to link differences in neural plasticity with intelligence, and this view has recently received some empirical support.

**Trends in IQ**

Since the twentieth century, IQ scores have increased at an average rate of around three IQ points per decade in most parts of the world. This phenomenon has been named the Flynn effect (aka the "Lynn-Flynn effect") named after Richard Lynn and James R. Flynn. Attempted explanations have included improved nutrition, a trend towards smaller families, better education, greater environmental complexity, and heterosis. Some factions believe that modern education has become more geared toward IQ tests, thus rendering higher scores, but not necessarily higher intelligence. Tests are therefore renormalized occasionally to obtain mean scores of 100, for example WISC-R (1974), WISC-III (1991) and WISC-IV (2003). This adjustment specifically addresses the variation over time, allowing us to compare scores from different times.

Some researchers argue that the Flynn effect may have ended in some developed nations starting in the mid 1990s, namely in Denmark and in Norway.

**Mutability**

Though generally believed to be immutable, recent research suggests that certain mental activities can change the brain's raw ability to process information, leading to the conclusion that intelligence can be altered or changed over time. Studies into the neuroscience of animals indicate that challenging activities can produce changes in gene expression patterns of the brain.
A study on young adults published in April 2008 by a team from the Universities of Michigan and Bern supports the possibility of the transfer of fluid intelligence from specifically designed working memory training. Further research will be needed to determine nature, extent and duration of the proposed transfer: Among other questions, it remains to be seen whether the results extend to other kinds of fluid intelligence tests than the matrix test used in the study, and if so, whether, after training, fluid intelligence measures retain their correlation with educational and occupational achievement or if the value of fluid intelligence for predicting performance on other tasks changes. It is also unclear whether the training is durable of extended periods of time.

**Group differences**

Among the most controversial issues related to the study of intelligence is the observation that intelligence measures such as IQ scores vary between populations. While there is little scholarly debate about the existence of some of these differences, the reasons remain highly controversial both within academia and in the public sphere.

**Health**

A study of 11,282 individuals in Scotland who took intelligence tests at ages 7, 9 and 11 in the 1950s and 1960s, found an "inverse linear association" between childhood IQ scores and hospital admissions for injuries in adulthood. The association between childhood IQ and the risk of later injury remained even after accounting for factors such as the child's socioeconomic background. Research in Scotland has also shown that a 15-point lower IQ meant people had a fifth less chance of living to 76, while those with a 30-point disadvantage were 37% less likely than those with a higher IQ to live that long.

A decrease in IQ has also been shown as an early predictor of late-onset Alzheimer's Disease and other forms of dementia. In a 2004 study, Cervilla and colleagues showed that tests of cognitive ability provide useful predictive information up to a decade before the onset of dementia. However, when diagnosing individuals with a higher level of cognitive ability, in this study those
with IQ's of 120 or more, patients should not be diagnosed from the standard norm but from an adjusted high-IQ norm that measured changes against the individual's higher ability level. In 2000, Whalley and colleagues published a paper in the journal Neurology, which examined links between childhood mental ability and late-onset dementia. The study showed that mental ability scores were significantly lower in children who eventually developed late-onset dementia when compared with other children tested.

Several factors can lead to significant cognitive impairment, particularly if they occur during pregnancy and childhood when the brain is growing and the blood-brain barrier is less effective. Such impairment may sometimes be permanent, or may sometimes be partially or wholly compensated for by later growth. Several harmful factors may also combine, possibly causing greater impairment.

Developed nations have implemented several health policies regarding nutrients and toxins known to influence cognitive function. These include laws requiring fortification of certain food products and laws establishing safe levels of pollutants (e.g. lead, mercury, and organochlorides). Comprehensive policy recommendations targeting reduction of cognitive impairment in children have been proposed.

In terms of the effect of one's intelligence on health, high childhood IQ correlates with one's chance of becoming a vegetarian in adulthood and inversely correlates with the chances of smoking, becoming obese, and having serious traumatic accidents in adulthood.

**Sex**

Men and women have statistically significant differences in average scores on tests of particular abilities. Studies also illustrate consistently greater variance in the performance of men compared to that of women (i.e., men are more represented at the extremes of performance)

IQ tests are weighted on these sex differences so there is no bias on average in favor of one sex, however the consistent difference in variance is not removed. Because the tests are defined so there is no average difference it is difficult to put any meaning on a statement that one sex has a higher intelligence than the other. However some people have made claims like this even using
unbiased IQ tests. For instance claims that men tend to outperform women on average by 3-4 IQ points based on tests of medical students where the greater variance of mens' IQ can be expected to contribute to the result, or where a 'correction' is made for different maturation ages.

**Race**

The 1996 Task Force investigation on Intelligence sponsored by the American Psychological Association concluded that there are significant variations in I.Q. across races. The problem of determining the causes underlying this variation relates to the question of the contributions of "nature and nurture" to I.Q. Most scientists believe there is insufficient data to resolve the contributions of heredity and environment. One of the most notable researchers arguing for a strong hereditary basis is Arthur Jensen. In contrast, Richard Nisbett, the long-time director of the Culture and Cognition program at the University of Michigan, argues that intelligence is a matter of environment and biased standards that praise a certain type of “intelligence” (success on standardized tests) over another.

In a recent editorial in the New York Times entitled, “All Brains Are the Same Color“, Dr. Nisbett argues against the hypothesis that IQ differences between blacks and whites are genetic. He notes that decades of research have not supported the assertion that one of the races in the United States is biologically inferior in terms of innate intelligence. Rather, he argues, “Whites showed better comprehension of sayings, better ability to recognize similarities and better facility with analogies — when solutions required knowledge of words and concepts that were more likely to be known to whites than to blacks. But when these kinds of reasoning were tested with words and concepts known equally well to blacks and whites, there were no differences. Within each race, prior knowledge predicted learning and reasoning, but between the races it was prior knowledge only that differed.”

**Positive correlations with IQ**

While IQ is sometimes treated as an end unto itself, scholarly work on IQ focuses to a large extent on IQ's validity, that is, the degree to which IQ correlates with outcomes such as job performance, social pathologies, or academic achievement. Different IQ tests differ in their validity for various outcomes. Traditionally, correlation for IQ and outcomes is viewed as a
means also to predict performance; however readers should distinguish between prediction in the hard sciences and the social sciences.

**Job performance**

According to Schmidt and Hunter, "for hiring employees without previous experience in the job the most valid predictor of future performance is general mental ability." The validity depends on the type of job and varies across different studies, ranging from 0.2 to 0.6. However IQ mostly correlates with cognitive ability only if IQ scores are below average, making it less useful for predicting performance of higher scorers. Also, IQ is related to the "academic tasks" (auditory and linguistic measures, memory tasks, academic achievement levels) and much less related to tasks where precise hand work ("motor functions") is required. For highly qualified activities (research, management) high IQ scores are very relevant, whereas for less qualified activities, physical ability (body speed, hand-eye coordination) is more important. According to Marley Watkins and colleagues, IQ is a causal influence on future academic achievement, whereas academic achievement does not substantially influence future IQ scores. Treena Eileen Rohde and Lee Anne Thompson write that general cognitive ability but not specific ability scores predict academic achievement, with the exception that processing speed and spatial ability predict performance on the SAT math beyond the effect of general cognitive ability.

The American Psychological Association's report Intelligence: Knowns and Unknowns states that other individual characteristics such as interpersonal skills, aspects of personality, etcetera, are probably of equal or greater importance, but at this point we do not have equally reliable instruments to measure them. Although, more recently, others argue that since most of professional tasks are now standardized or automated, and ranked IQ is a stable measurement over time with high correlation with many positive personal traits from the general population, it is the best tool to help determining the best hiring and job placement at any stage in a career, independently of experience, personality bias or any formal training one may acquire.
Some researchers claim that "in economic terms it appears that the IQ score measures something with decreasing marginal value. It is important to have enough of it, but having lots and lots does not buy you that much."

Other studies show that ability and performance for jobs are linearly related, such that at all IQ levels, an increase in IQ translates into a concomitant increase in performance. Charles Murray, coauthor of The Bell Curve, found that IQ has a substantial effect on income independently of family background.

The American Psychological Association's report Intelligence: Knowns and Unknowns states that IQ scores account for about one-fourth of the social status variance and one-sixth of the income variance. Statistical controls for parental SES eliminate about a quarter of this predictive power. Psychometric intelligence appears as only one of a great many factors that influence social outcomes.

One reason why some studies claim that IQ only accounts for a sixth of the variation in income is because many studies are based on young adults (many of whom have not yet completed their education). On pg 568 of The g Factor, Arthur Jensen claims that although the correlation between IQ and income averages a moderate 0.4 (one sixth or 16% of the variance), the relationship increases with age, and peaks at middle age when people have reached their maximum career potential. In the book, A Question of Intelligence, Daniel Seligman cites an IQ income correlation of 0.5 (25% of the variance).

A 2002 study further examined the impact of non-IQ factors on income and concluded that an offspring's inherited wealth, race, and schooling are more important as factors in determining income than IQ. For example, in 2004 African-American workers had the second-highest median earnings of American minority groups after Asian Americans[76] and among minority groups, only Asian Americans were more likely to hold white-collar occupations (management, professional, and related fields) despite the significant IQ gap between African and Asian Americans.
Other correlations with IQ

In addition, IQ and its correlation to health, violent crime, gross state product, and government effectiveness are the subject of a 2006 paper in the publication Intelligence. The paper breaks down IQ averages by U.S. states using the federal government's National Assessment of Educational Progress math and reading test scores as a source.

There is a correlation of -0.19 between IQ scores and number of juvenile offences in a large Danish sample; with social class controlled, the correlation dropped to -0.17. Similarly, the correlations for most "negative outcome" variables are typically smaller than 0.20, which means that test scores are associated with less than 4% of their total variance. It is important to realize that the causal links between psychometric ability and social outcomes may be indirect. Children with poor scholastic performance may feel alienated. Consequently, they may be more likely to engage in delinquent behavior, compared to other children who do well.

IQ is also negatively correlated with certain diseases.

Tambs et al found that occupational status, educational attainment, and IQ are individually heritable; and further found that "genetic variance influencing educational attainment ... contributed approximately one-fourth of the genetic variance for occupational status and nearly half the genetic variance for IQ". In a sample of U.S. siblings, Rowe et al. report that the inequality in education and income was predominantly due to genes, with shared environmental factors playing a subordinate role.

Criticism and views

Binet

Alfred Binet, a French psychologist, did not believe that IQ test scales qualified to measure intelligence. He neither invented the term "intelligence quotient" nor supported its numerical expression. He stated:

The scale, properly speaking, does not permit the measure of intelligence, because intellectual qualities are not superposable, and therefore cannot be measured as linear surfaces are measured.
Binet, 1905

Binet had designed the Binet-Simon intelligence scale in order to identify students who needed special help in coping with the school curriculum. He argued that with proper remedial education programs, most students regardless of background could catch up and perform quite well in school. He did not believe that intelligence was a measurable fixed entity.

Binet cautioned:

Some recent thinkers seem to have given their moral support to these deplorable verdicts by affirming that an individual's intelligence is a fixed quantity, a quantity that cannot be increased. We must protest and react against this brutal pessimism; we must try to demonstrate that it is founded on nothing.

The Miss-measure of Man

Some scientists dispute psychometrics entirely. In The Mismeasure of Man, Harvard professor and paleontologist Stephen Jay Gould argued that intelligence tests were based on faulty assumptions and showed their history of being used as the basis for scientific racism, although did not at any point attempt to scientifically refute intelligence tests. He wrote:

…the abstraction of intelligence as a single entity, its location within the brain, its quantification as one number for each individual, and the use of these numbers to rank people in a single series of worthiness, invariably to find that oppressed and disadvantaged groups—races, classes, or sexes—are innately inferior and deserve their status.(pp. 24–25)

He spent much of the book criticizing the concept of IQ, including a historical discussion of how the IQ tests were created and a technical discussion of why g is simply a mathematical artifact. Later editions of the book included criticism of The Bell Curve.

Gould did not dispute the stability of test scores, nor the fact that they predict certain forms of achievement. He did argue, however, that to base a concept of intelligence on these test scores alone is to ignore many important aspects of mental ability.
Relation between IQ and intelligence

According to Dr. C. George Boeree of Shippensburg University, intelligence is a person's capacity to (1) acquire knowledge (i.e. learn and understand), (2) apply knowledge (solve problems), and (3) engage in abstract reasoning. It is the power of one's intellect, and as such is clearly a very important aspect of one's overall well-being. Psychologists have attempted to measure it for well over a century.

Several other ways of measuring intelligence have been proposed. Daniel Schacter, Daniel Gilbert, and others have moved beyond general intelligence and IQ as the sole means to describe intelligence.

Test bias

The American Psychological Association's report Intelligence: Knowns and Unknowns states that IQ tests as predictors of social achievement are not biased against people of African descent since they predict future performance, such as school achievement, similarly to the way they predict future performance for European descent. However, IQ tests may well be biased when used in other situations. A 2005 study stated that "differential validity in prediction suggests that the WAIS-R test may contain cultural influences that reduce the validity of the WAIS-R as a measure of cognitive ability for Mexican American students," indicating a weaker positive correlation relative to sampled white students. Other recent studies have questioned the culture-fairness of IQ tests when used in South Africa. Standard intelligence tests, such as the Stanford-Binet, are often inappropriate for children with autism and dyslexia; the alternative of using developmental or adaptive skills measures are relatively poor measures of intelligence in autistic children, and have resulted in incorrect claims that a majority of children with autism are mentally retarded.

Outdated methodology

A 2006 paper argues that mainstream contemporary test analysis does not reflect substantial recent developments in the field and "bears an uncanny resemblance to the psychometric state of the art as it existed in the 1950s." It also claims that some of the most influential recent studies
on group differences in intelligence, in order to show that the tests are unbiased, use outdated methodology.

Some argue that IQ scores are used as an excuse for not trying to reduce poverty or otherwise improve living standards for all. Claimed low intelligence has historically been used to justify the feudal system and unequal treatment of women (see sex and intelligence). In contrast, others claim that the refusal of "high-IQ elites" to take IQ seriously as a cause of inequality is itself immoral.

**The view of the American Psychological Association**

In response to the controversy surrounding The Bell Curve, the American Psychological Association's Board of Scientific Affairs established a task force in 1995 to write a consensus statement on the state of intelligence research which could be used by all sides as a basis for discussion. The full text of the report is available through several websites.

In this paper the representatives of the association regret that IQ-related works are frequently written with a view to their political consequences: "research findings were often assessed not so much on their merits or their scientific standing as on their supposed political implications".

The task force concluded that IQ scores do have high predictive validity for individual differences in school achievement. They confirm the predictive validity of IQ for adult occupational status, even when variables such as education and family background have been statistically controlled. They agree that individual differences in intelligence are substantially influenced by genetics and that both genes and environment, in complex interplay, are essential to the development of intellectual competence.

They state there is little evidence to show that childhood diet influences intelligence except in cases of severe malnutrition. The task force agrees that large differences do exist between the average IQ scores of blacks and whites, and that these differences cannot be attributed to biases in test construction. The task force suggests that explanations based on social status and cultural differences are possible, and that environmental factors have raised mean test scores in many
populations. Regarding genetic causes, they noted that there is not much direct evidence on this point, but what little there is fails to support the genetic hypothesis.

The APA journal that published the statement, American Psychologist, subsequently published eleven critical responses in January 1997, several of them arguing that the report failed to examine adequately the evidence for partly-genetic explanations.

**High IQ societies**

A high IQ society is an organization that limits membership to people who are within a certain high percentile of IQ test results. (For example, Mensa International)

**Psychometric approach**

Despite the variety of concepts of intelligence, the approach to understanding intelligence with the most supporters and published research over the longest period of time is based on psychometrics testing. Such intelligence quotient (IQ) tests include the Stanford-Binet, Raven's Progressive Matrices, the Wechsler Adult Intelligence Scale and the Kaufman Assessment Battery for Children.

Charles Spearman is generally credited with discovering general intelligence, which he reported in his 1904 American Journal of Psychology article titled "General Intelligence," Objectively Determined and Measured. Based on the results of a series of studies collected in Hampshire, England, Spearman concluded that there was a common function (or group of functions) across intellectual activities including what he called intelligence (i.e., school rank, which Spearman thought of as “present efficiency” in school courses; the difference between school rank and age, which was conceptualized as “native capacity;” teacher ratings; and peer ratings provided by the two oldest students, which was termed “common sense”) and sensory discriminations (i.e., discrimination of pitch, brightness, and weight). This common function became known as “g” or general intelligence.

To objectively determine and measure general intelligence, Spearman invented the first technique of factor analysis (the method of Tetrad Differences) as a mathematical proof of the
Two-Factor Theory. The factor analytic results indicated that every variable measured a common function to varying degrees, which led Spearman to develop the somewhat misleadingly named Two-Factor Theory of Intelligence. The Two-Factor Theory of Intelligence holds that every test can be divided into a “g” factor and an “s” factor. The g-factor measures the “general” factor or common function among ability tests. The s-factor measures the “specific” factor unique to a particular ability test. Based on a more modern interpretation of his work, Spearman’s g factor represents the fact that any set of cognitive ability tests, no matter how different, tend to all correlate positively.

L. L. Thurstone extended and generalized Spearman’s method of factor analysis into what is called the Centroid method and which became the basis for modern factor analysis. Thurstone demonstrated that Spearman’s one common factor method (Spearman’s method yielded only a single factor) was a special case of his multiple factor analysis. Thurstone’s research lead him to propose a model of intelligence that included seven orthogonal (unrelated) factors (i.e., verbal comprehension, word fluency, number facility, spatial visualization, associative memory, perceptual speed and reasoning) referred to as the Primary Mental Abilities.

In a critical review of the adult testing literature, Raymond B. Cattell found that a considerable percentage of intelligence tests that purported to measure adult intellectual functioning had all of the trappings of using college students in their development. To account for differences between children/adolescents and adults, which past theory did not address, Cattell proposed two types of cognitive abilities in a revision of Spearman’s concept of general intelligence. Fluid intelligence (Gf) was hypothesized as the ability to discriminate and perceive relations (e.g., analogical and syllogistic reasoning), and crystallized intelligence (Gc) was hypothesized as the ability to discriminate relations that had been established originally through Gf, but no longer required the identification of the relation (commonly assessed using information or vocabulary tests). In addition, fluid intelligence was hypothesized to increase until adolescence and then to slowly decline, and crystallized intelligence increases gradually and stays relatively stable across most of adulthood until it declines in late adulthood.

With his student John L. Horn, Cattell indicated that Gf and Gc were only two among several factors manifest in intelligence tests scores under the umbrella of what became known as Gf/Gc
Theory. General visualization (Gv; visual acuity, depth perception), general fluency (F, facility in recalling words), general speediness (Gs; performance on speeded, simple tasks) were among several cognitive ability factors added to Gf/Gc Theory.

J. P. Guilford sought to more fully explore the scope of the adult intellect by providing the concept of intelligence with a strong, comprehensive theoretical backing. The Structure-of-Intelect model (SI model) was designed as a cross classification system with intersections in the model providing the basis for abilities similar to Mendeleev’s periodic table in chemistry. The three-dimensional cube—shaped model includes five content categories (the way in which information is presented on a test; visual, auditory, symbolic, semantic, and behavioral), six operation categories (what is done on a test; evaluation, convergent production, divergent production, memory retention, memory recording, and cognition), and six product categories (the form in which information is process on a test; units, classes, relations, systems, transformations, and implications). The intersection of three categories provides a frame of reference for generating one or more new hypothetical factors of intelligence.

John B. Carroll re-analyzed 461 datasets in the single most comprehensive study of cognitive abilities. This analysis led him to propose the Three-Stratum Theory, which is a hierarchical model of intellectual functioning. The strataums represent three different levels of generality over the domain of cognitive abilities. At the bottom is the first stratum, which is represented by narrow abilities that are highly specialized (e.g., induction, spelling ability). The second stratum is represented by broad abilities that include moderate specializations in various domains. Carroll identified eight second-stratum factors: fluid intelligence, crystallized intelligence, general memory and learning, broad visual perception, broad auditory perception, broad retrieval ability, broad cognitive speediness, and processing speed (reaction time decision speed). Carroll has noted the similarity of his second stratum abilities and the Gf/Gc factors, although the Three-Stratum Theory does not incorporate the developmental trajectories associated with Gf/Gc Theory. Carroll accepted Spearman’s concept of general intelligence, for the most part, as a representation of the uppermost third stratum.

More recently, an amalgamation the Gf-Gc theory of Cattell and Horn with Carroll's Three-Stratum theory has led to the Cattell-Horn-Carroll (CHC) theory of cognitive abilities. CHC
researchers have produced numerous studies that have influenced diagnostic issues and test development.

Intelligence, as measured by IQ and other aptitude tests, is widely used in educational, business, and military settings due to its efficacy in predicting behavior. g is highly correlated with many important social outcomes - individuals with low IQs are more likely to be divorced, have a child out of marriage, be incarcerated, and need long term welfare support, while individuals with high IQs are associated with more years of education, higher status jobs and higher income. Intelligence is significantly correlated with successful training and performance outcomes, and g is the single best predictor of successful job performance.

**Controversies**

IQ tests were originally devised specifically to predict educational achievementThe inventors of the IQ did not believe they were measuring fixed intelligence. Despite this, critics argue that intelligence tests have been used to support nativistic theories in which intelligence is viewed as a qualitatively unique faculty with a relatively fixed quantity.

Critics of the psychometric approach point out that people in the general population have a somewhat different and broader conception of intelligence than what is measured in IQ tests. In turn, they argue that the psychometric approach measures only a part of what is commonly understood as intelligence. Furthermore, skeptics argue that even though tests of mental abilities are correlated, people still have unique strengths and weaknesses in specific areas. Consequently they argue that psychometric theorists over-emphasize g.

Researchers in the field of human intelligence have encountered a considerable amount of public concern and criticism — much more than scientists in other areas normally receive. A number of critics have challenged the relevance of psychometric intelligence in the context of everyday life. There have also been controversies over genetic factors in intelligence, particularly questions regarding the relationship between race and intelligence and sex and intelligence. Another controversy in the field is how to interpret the increases in test scores that have occurred over time, the so-called Flynn effect.
Stephen Jay Gould was one of the most vocal critics of intelligence testing. In his book, *The Mismeasure of Man*, Gould argued that intelligence is not truly measurable, and also challenged the hereditarian viewpoint on intelligence. Many of Gould's criticisms were aimed at Arthur Jensen, who responded that his work had been misrepresented, also stating that making conclusions about modern IQ tests by criticizing the flaws of early intelligence research is like condemning the auto industry by criticizing the performance of the Model T.

**Theory of multiple intelligences**

The theory of multiple intelligences was proposed by Howard Gardner in 1983, to more accurately define the concept of intelligence and address whether methods which claim to measure intelligence (or aspects thereof) are truly scientific.

Gardner's theory argues that intelligence, particularly as it is traditionally defined, does not sufficiently encompass the wide variety of abilities humans display. In his conception, a child who masters multiplication easily is not necessarily more intelligent overall than a child who struggles to do so. The second child may be stronger in another kind of intelligence, and therefore may best learn the given material through a different approach, may excel in a field outside of mathematics, or may even be looking through the multiplication learning process at a fundamentally deeper level that hides a potentially higher mathematical intelligence than in the one who memorizes the concept easily.

**Development of the theory**

"Howard Gardner, multiple intelligences and education" by given field (child prodigies, autistic savants);

- Neurological evidence for areas of the brain that are specialized for particular capacities (often including studies of people who have suffered brain damage affecting a specific capacity);
- The evolutionary relevance of the various capacities;
- Psychometric studies; and
Susceptibility to encoding in a symbol system or notation (e.g. written language, musical notation, choreography).

An identifiable core operation or set of operations.

A distinctive development history, along with a definable set of 'end-state' performances.

Gardner originally identified seven core intelligences: linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal and intrapersonal. In 1997 at the symposium "MIND 97" (Multiple Intelligences New Directions) he added an eighth, the "Naturalist" Intelligence. Investigation continues on whether there are Existentialist (existential) and Spiritualist (spiritual) Intelligences.

The theory has been widely criticized in the psychology and educational theory communities. The most common criticisms argue that Gardner's theory is based on his own intuition rather than empirical data and that the intelligences are just other names for talents or personality types. Despite these criticisms, the theory has enjoyed a great deal of popularity amongst educators over the past twenty years. There are several schools which espouse MI as a pedagogy, and many individual teachers who incorporate some or all of the theory into their methodology. Many books and educational materials exist which explain the theory and how it may be applied to the school of IFSS.

**Gardner's categories of intelligence**

The categories of intelligence proposed by Gardner are:

**Bodily-kinesthetic**

This area has to do with bodily movement and psychology. In theory, people who have Bodily-kinesthetic intelligence should learn better by involving muscular movement, i.e. getting up and moving around into the learning experience, and are generally good at physical activities such as sports or dance. They may enjoy acting or performing, and in general they are good at building and making things. They often learn best by doing something physically, rather than reading or hearing about it. Those with strong bodily-kinesthetic intelligence seem to use what might be
termed muscle memory - they remember things through their body such as verbal memory or images.

Careers that suit those with this intelligence include athletes, dancers, actors, surgeons, doctors, builders, and soldiers. Although these careers can be duplicated through virtual simulation they will not produce the actual physical learning that is needed in this intelligence.

**Interpersonal**

This area has to do with interaction with others. In theory, people who have a high interpersonal intelligence tend to be extroverts, characterized by their sensitivity to others' moods, feelings, temperaments and motivations, and their ability to cooperate in order to work as part of a group. They communicate effectively and empathize easily with others, and may be either leaders or followers. They typically learn best by working with others and often enjoy discussion and debate.

Careers that suit those with this intelligence include sales, politicians, managers, teachers, and social workers.

**Verbal-linguistic**

This area has to do with words, spoken or written. People with high verbal-linguistic intelligence display a facility with words and languages. They are typically good at reading, writing, telling stories and memorizing words along with dates. They tend to learn best by reading, taking notes, listening to lectures, and discussion and debate. They are also frequently skilled at explaining, teaching and oration or persuasive speaking. Those with verbal-linguistic intelligence learn foreign languages very easily as they have high verbal memory and recall, and an ability to understand and manipulate syntax and structure.

This intelligence is highest in writers, lawyers, philosophers, journalists, politicians, poets, and teachers.
Logical-mathematical

This area has to do with logic, abstractions, reasoning, and numbers. While it is often assumed that those with this intelligence naturally excel in mathematics, chess, computer programming and other logical or numerical activities, a more accurate definition places emphasis on traditional mathematical ability and more reasoning capabilities, abstract patterns of recognition, scientific thinking and investigation, and the ability to perform complex calculations. It correlates strongly with traditional concepts of "intelligence" or IQ.

Many scientists, mathematicians, engineers, doctors and economists function in this type of intelligence.

Naturalistic

This area has to do with nature, nurturing and relating information to one's natural surroundings. This type of intelligence was not part of Gardner's original theory of Multiple Intelligences, but was added to the theory in 1997. Those with it are said to have greater sensitivity to nature and their place within it, the ability to nurture and grow things, and greater ease in caring for, taming and interacting with animals. They may also be able to discern changes in weather or similar fluctuations in their natural surroundings. Recognizing and classifying things are at the core of a naturalist. They must connect a new experience with prior knowledge to truly learn something new.

"Naturalists" learn best when the subject involves collecting and analyzing, or is closely related to something prominent in nature; they also don't enjoy learning unfamiliar or seemingly useless subjects with little or no connections to nature. It is advised that naturalistic learners would learn more through being outside or in a kinesthetic way.

The theory behind this intelligence is often criticized, much like the spiritual or existential intelligence (see below), as it is seen by many as not indicative of an intelligence but rather an interest.
Careers that suit those with this intelligence include scientists, naturalists, conservationists, gardeners and farmers.

**Intrapersonal**

This area has to do with introspective and self-reflective capacities. Those who are strongest in this intelligence are typically introverts and prefer to work alone. They are usually highly self-aware and capable of understanding their own emotions, goals and motivations. They often have an affinity for thought-based pursuits such as philosophy. They learn best when allowed to concentrate on the subject by themselves. There is often a high level of perfectionism associated with this intelligence.

Careers that suit those with this intelligence include philosophers, psychologists, theologians, writers and scientists.

**Visual-spatial**

This area has to do with vision and spatial judgment. People with strong visual-spatial intelligence are typically very good at visualizing and mentally manipulating objects. Those with strong spatial intelligence are often proficient at solving puzzles. They have a strong visual memory and are often artistically inclined. Those with visual-spatial intelligence also generally have a very good sense of direction and may also have very good hand-eye coordination, although this is normally seen as a characteristic of the bodily-kinesthetic intelligence.

Some critics point out the high correlation between the spatial and mathematical abilities, which seems to disprove the clear separation of the intelligences as Gardner theorized. Since solving a mathematical problem involves reassuringly manipulating symbols and numbers, spatial intelligence is involved in visually changing the reality. A thorough understanding of the two intelligences precludes this criticism, however, as the two intelligences do not precisely conform to the definitions of visual and mathematical abilities. Although they may share certain characteristics, they are easily distinguished by several factors, and there are many with strong logical-mathematical intelligence.
Careers that suit those with this intelligence include artists, engineers, and architects.

**Musical**

This area has to do with rhythm, music, and hearing. Those who have a high level of musical-rhythmic intelligence display greater sensitivity to sounds, rhythms, tones, and music. They normally have good pitch and may even have absolute pitch, and are able to sing, play musical instruments, and compose music. Since there is a strong auditory component to this intelligence, those who are strongest in it may learn best via lecture. In addition, they will often use songs or rhythms to learn and memorize information, and may work best with music playing in the background.

Careers that suit those with this intelligence include instrumentalists, singers, conductors, disc-jockeys, orators, writers (to a certain extent) and composers and sales reps.

**Other intelligences**

Other intelligences have been suggested or explored by Gardner and his colleagues, including spiritual, existential and moral intelligence. Gardner excluded spiritual intelligence due to what he perceived as the inability to codify criteria comparable to the other "intelligences". Existential intelligence (the capacity to raise and reflect on philosophical questions about life, death, and ultimate realities) meets most of the criteria with the exception of identifiable areas of the brain that specialize for this faculty. Moral capacities were excluded because they are normative rather than descriptive.

**Savant Syndrome**

Gardner used case studies of autistic savants as part of his theory on multiple intelligences. On one hand they have severe mental disabilities and thus impaired social skills, but on the other they have some extraordinary mental abilities not found in most people. The Savant Syndrome skills involve striking feats of memory and often include arithmetic calculation and sometimes unusual abilities in art or music. There is actually a disproportionate regularity with which the triad of blindness, mental disability and musical genius occurs in savant syndrome. Examples
include Derek Paravicini who has severe learning disability but can remember every song he has ever heard.

Others with savant syndrome are not autistic, but develop these abilities later on in life usually as a result of some accident, illness or trauma. For example Alonzo Clemons was a regular child until he suffered brain damage as a result of a fall. Afterwards he learned to create accurate animal sculptures from clay using his photographic memory. Some scientists thus believe that the potential to be a genius is latent in all people but is obscured by normal functioning intellect. In the case of savants, the damage to the brain has somehow disrupted normal functioning and has allowed the brain to access these latent skills.

Savants are generally viewed as having exceptional spatial intelligence but verbal defects.

**Use in education**

Traditionally, schools have emphasized the development of logical intelligence and linguistic intelligence (mainly reading and writing). While many students function well in this environment, there are those who do not. Gardner's theory argues that students will be better served by a broader vision of education, wherein teachers use different methodologies, exercises and activities to reach all students, not just those who excel at linguistic and logical intelligence.

Many teachers see the theory as simple common sense. Some say that it validates what they already know: that students learn in different ways. On the other hand, James Traub's article in The New Republic notes that Gardner's system has not been accepted by most academics in intelligence or teaching.

George Miller, the esteemed psychologist credited with discovering the mechanisms by which short term memory operates, wrote in The New York Times Book Review that Gardner's argument boiled down to "hunch and opinion" (p. 20). And Gardner's subsequent work has done very little to shift the balance of opinion. A recent issue of Psychology, Public Policy, and Law devoted to the study of intelligence contained virtually no reference to Gardner's work. Most people who study intelligence view M.I. theory as rhetoric rather than science, and they're divided on the virtues of the rhetoric.
The application of the theory of multiple intelligences varies widely. It runs the gamut from a teacher who, when confronted with a student having difficulties, uses a different approach to teach the material, to an entire school using MI as a framework. In general, those who subscribe to the theory strive to provide opportunities for their students to use and develop all the different intelligences, not just the few at which they naturally excel.

A Harvard-led study of 41 schools using the theory came to the conclusion that in these schools there was "a culture of hard work, respect, and caring; a faculty that collaborated and learned from each other; classrooms that engaged students through constrained but meaningful choices, and a sharp focus on enabling students to produce high-quality work."

Of the schools implementing Gardner's theory, the most well-known is New City School, in St. Louis, Missouri, which has been using the theory since 1988. The school's teachers have produced two books for teachers, Celebrating Multiple Intelligences and Succeeding With Multiple Intelligences and the principal, Thomas Hoerr, has written Becoming a Multiple Intelligences School as well as many articles on the practical applications of the theory. The school has also hosted four conferences, each attracting over 200 educators from around the world and remains a valuable resource for teachers interested in implementing the theory in their own classrooms.

Thomas Armstrong considers that Waldorf education organically engages all of Gardner's seven intelligences.

**Criticism**

Criticisms of the theory's application in schools come in four major forms. First, opponents argue that the theory may lead to a sort of intellectual relativism, wherein students' failures are explained away as being an example of a different kind of intelligence, not a lesser one. As a result, there are those in the Gifted and Talented community who have criticized Gardner's theory, because any support of the idea that all children are equally gifted, just in different ways, might lead to the reduction or broadening of Gifted and Talented programs. Gardner himself has said that he does not believe his theory will have this type of consequence for gifted programs, and that he never intended his theory to affirm that all people are equally gifted, but rather that
the definition of intelligence was too narrow to encompass all types of intelligence. The second major problem with Gardener's theory is that in his denial that there is any real statistical factor (such as "g") contributing to many intellectual tasks, he does not account for that correlation in the empirical data. That is, every multiple domain IQ test ever normed (Wechsler Adult Intelligence Scale, Stanford-Binet IQ test, Ronald K. Hoeflin's Mega test) has shown that all the areas tested are correlated [citation needed]. This trend is also shown in tests like the Graduate Record Examination, the SAT, the PSAT, the ACT, etc., on every one of which each section correlates to a high degree with the others; the correlation rarely drops below 0.6 on the -1 to 1 scale. In fact, Gardener has downplayed the correlation between his intelligences.

The third major criticism of multiple intelligences as an application in schools is that there is a risk of teachers excusing students from doing well in an area in which they are weak. Students who may not "naturally" learn to read and write well nevertheless need to read and write well. Similarly, the goal is for students to succeed in all areas defined as intelligence by Gardner, and not default to their strengths.

There is an inherent risk of students developing a sense of inferiority in given areas. Students who are identified as not being "musical" learners may have less incentive to become musical learners.

A methodological criticism is that the assessment of one's form of intelligence is usually determined via a self-administered test. The usual form asks the respondent 40-60 questions such as "Do you prefer to stand when working?" This sort of question leaves much room for assessment error, and does not conform to survey techniques and methodology such as double-blind testing.

Another criticism is that the distinction between developmental stage and "intelligence" is not sufficiently well accounted for. For example, the average five-year-old is more likely to answer "yes" to the question "Do you like to move about a lot?" than the average forty-year-old. Conversely, the older person is more likely to seem to have interpersonal "intelligence," which might be better labeled as a developed skill—solving problems with others or speaking in public, for example.
Opposing views

The definition of intelligence

As one would expect from a theory that redefines intelligence, one of the major criticisms of the theory is that it is ad hoc. The criticism is that Gardner is not expanding the definition of the word "intelligence"; rather, he denies the existence of intelligence, as is traditionally understood, and instead uses the word "intelligence" whenever other people have traditionally used words like "ability". This practice has been criticized by Robert J. Sternberg (1983, 1991), Eysenck (1994), and Scarr (1985). Defenders of MI theory argue that the traditional definition of intelligence is too narrow, and thus broader definition more accurately reflects the differing ways in which humans think and learn. They would state that the traditional interpretation of intelligence collapses under the weight of its own logic and definition, noting that intelligence is usually defined as the cognitive or mental capacity of an individual, which by logical necessity would include all forms of mental qualities, not simply the ones most transparent to standardized I.Q. tests.

Some of these criticisms arise from the fact that Gardner has not settled on a single definition of intelligence. He originally defined it as the ability to solve problems that have value in at least one culture, or as something that a student is interested in. However, he added a disclaimer that he has no fixed definition, and his classification is more of an artistic judgment than fact:

Ultimately, it would certainly be desirable to have an algorithm for the selection of an intelligence, such that any trained researcher could determine whether a candidate's intelligence met the appropriate criteria. At present, however, it must be admitted that the selection (or rejection) of a candidate's intelligence is reminiscent more of an artistic judgment than of a scientific assessment. (Gardner, Frames of Mind: The Theory of Multiple Intelligences, 1985)

Gardner argues that by calling linguistic and logical-mathematical abilities intelligences, but not artistic, musical, athletic, etc. abilities, the former are needlessly aggrandized. Many critics balk at this widening of the definition, saying that it ignores "the connotation of intelligence...[which] has always connoted the kind of thinking skills that makes one successful in school."
Gardner writes "I balk at the unwarranted assumption that certain human abilities can be arbitrarily singled out as intelligence while others cannot" Critics hold that given this statement, any interest or ability is now redefined as "intelligence". Thus, by adopting this theory, studying intelligence becomes difficult, because it diffuses into the broader concept of ability or talent. Gardner's addition of the naturalistic intelligence and conceptions of the existential and moral intelligences are seen as fruits of this diffusion. Defenders of the MI theory would argue that this is simply a recognition of the broad scope of inherent mental abilities, and that such an exhaustive scope by nature defies a simple, one-dimensional classification such as an assigned IQ value. They would claim that such one-dimensional values are typically of limited value in predicting the real world application of unique mental abilities.

**Intellectual relativism**

Many critics argue that the theory's definition of intelligence leads to the belief that all human beings are equally intelligent, but in large part this is based on misunderstanding. Gardner argues that there are many different kinds of intelligence and that none is better or more important. However, people have differing abilities within these types of intelligences. Albert Einstein and a person who is good at mathematics both display logical-mathematical intelligence, but at no point does the theory say that all people with the logical-mathematical intelligence are equally intelligent.

**Triarchic theory of intelligence**

The Triarchic Theory of Intelligence was formulated by Robert J. Sternberg, a prominent figure in the research of human intelligence. The theory by itself was groundbreaking in that it was among the first to go against the psychometric approach to intelligence and take a more cognitive approach. Sternberg’s definition of human intelligence is “(a) mental activity directed toward purposive adaptation to, selection and shaping of, real-world environments relevant to one’s life” (Sternberg, 1985, p. 45), which means that intelligence is how well an individual deals with environmental changes throughout their lifespan. Sternberg’s theory comprises three parts: componential, experiential, and practical.
Different components of information processing

Sternberg associated the workings of the mind with a series of components. These components he labeled the metacomponents, performance components, and knowledge-acquisition components (Sternberg, 1985).

The metacomponents are executive processes used in problem solving and decision making that involve the majority of managing our mind. They tell the mind how to act. Metacomponents are also sometimes referred to as a homunculus. A homunculus is a fictitious or metaphorical "person" inside our head that controls our actions, and which is often seen to invite an infinite regress of homunculi controlling each other (Sternberg, 1985).

Sternberg’s next set of components, performance components, are the processes that actually carry out the actions the metacomponents dictate. These are the basic processes that allow us to do tasks, such as perceiving problems in our long-term memory, perceiving relations between objects, and applying relations to another set of terms (Sternberg, 1997).

The last set of components, knowledge-acquisition components, are used in obtaining new information. These components complete tasks that involve selectively choosing information from irrelevant information. These components can also be used to selectively combine the various pieces of information they have gathered. Gifted individuals are proficient in using these components because they are able to learn new information at a greater rate (Sternberg, 1997).

Whereas Sternberg explains that the basic information processing components underlying the three parts of his triarchic theory are the same, different contexts and different tasks require different kind of intelligence (Sternberg, 2001).
Sternberg's Triarchic Theory of Intelligence

Componential / Analytical Sub theory

Sternberg associated the componential subtheory with analytical giftedness. This is one of three types of giftedness that Sternberg recognizes. Analytical giftedness is influential in being able to take apart problems and being able to see solutions not often seen. Unfortunately, individuals with only this type are not as adept at creating unique ideas of their own. This form of giftedness is the type that is tested most often. Other areas deal with creativity and other abilities not easily tested. Sternberg gave the example of a student, “Alice”, who had excellent test scores and grades, and teachers viewed her as extremely smart. Alice was later seen having trouble in graduate school because she was not adept at creating ideas of her own (Sternberg, 1997).
Experiential / Creative Sub theory

Sternberg’s 2nd stage of his theory is his experiential subtheory. This stage deals mainly with how well a task is performed with regard to how familiar it is. Sternberg splits the role of experience into two parts: novelty and automation.

A novel situation is one that you have never experienced before. People that are adept at managing a novel situation can take the task and find new ways of solving it that the majority of people would not notice (Sternberg, 1997).

A process that has been automated has been performed multiple times and can now be done with little or no extra thought. Once a process is automatized, it can be run in parallel with the same or other processes. The problem with novelty and automation is that being skilled in one component does not ensure that you are skilled in the other (Sternberg, 1997).

The experiential subtheory also correlates with another one of Sternberg’s proposed types of giftedness. Synthetic giftedness is seen in creativity, intuition, and a study of the arts. People with synthetic giftedness are not often seen with the highest IQ’s because there are not currently any tests that can sufficiently measure these attributes, but synthetic giftedness is especially useful in creating new ideas to create and solve new problems. Sternberg also associated another one of his students, “Barbara”, to the synthetic giftedness. Barbara did not perform as well as Alice on the tests taken to get into school, but was recommended to Yale University based on her exceptional creative and intuitive skills. Barbara was later very valuable in creating new ideas for research (Sternberg, 1997).

Practical / Contextual Sub theory

Sternberg’s third subtheory of intelligence, called practical or contextual, “deals with the mental activity involved in attaining fit to context” (Sternberg, 1985, p.45). Through the three processes of adaptation, shaping, and selection, individuals create an ideal fit between themselves and their environment. This type of intelligence is often referred to as "street smarts."
Adaptation occurs when one makes a change within oneself in order to better adjust to one’s surroundings (Sternberg, 1985). For example, when the weather changes and temperatures drop, people adapt by wearing extra layers of clothing to remain warm.

Shaping occurs when one changes their environment to better suit one’s needs (Sternberg, 1985). A teacher may invoke the new rule of raising hands to speak to ensure that the lesson is taught with least possible disruption.

The process of selection is undertaken when a completely new alternate environment is found to replace the previous, unsatisfying environment to meet the individual’s goals (Sternberg, 1985). For instance, immigrants leave their lives in their homeland countries where they endure economical and social hardships and go to other countries in search of a better and less strained life.

The effectiveness with which an individual fits to his or her environment and contends with daily situations reflects degree of intelligence. Sternberg’s third type of giftedness, called practical giftedness, involves the ability to apply synthetic and analytic skills to everyday situations. Practically gifted people are superb in their ability to succeed in any setting (Sternberg, 1997). An example of this type of giftedness is "Celia". Celia did not have outstanding analytical or synthetic abilities, but she “was highly successful in figuring out what she needed to do in order to succeed in an academic environment. She knew what kind of research was valued, how to get articles into journals, how to impress people at job interviews, and the like” (Sternberg, 1997, p.44). Celia’s contextual intelligence allowed her to use these skills to her best advantage.

Sternberg also acknowledges that an individual is not restricted to having excellence in only one of these three intelligences. Many people may possess an integration of all three and have high levels of all three intelligences.
Structure of Intellect  (J.P. Guilford)

In Guilford's Structure of Intellect (SI) theory, intelligence is viewed as comprising operations, contents, and products. There are 5 kinds of operations (cognition, memory, divergent production, convergent production, evaluation), 6 kinds of products (units, classes, relations, systems, transformations, and implications), and 5 kinds of contents (visual, auditory, symbolic, semantic, behavioral). Since each of these dimensions is independent, there are theoretically 150 different components of intelligence.

Guilford researched and developed a wide variety of psychometric tests to measure the specific abilities predicted by SI theory. These tests provide an operational definition of the many abilities proposed by the theory. Furthermore, factor analysis was used to determine which tests appeared to measure the same or different abilities.

Parenthetically, it is interesting to note that a major impetus for Guilford's theory was his interest in creativity (Guilford, 1950). The divergent production operation identifies a number of different types of creative abilities.

Scope/Application:

SI theory is intended to be a general theory of human intelligence. Its major application (besides educational research) has been in personnel selection and placement. Meeker (1969) examines its application to education.
**Example:**

The following example illustrates three closely related abilities that differ in terms of operation, content, and product. Evaluation of semantic units (EMU) is measured by the ideational fluency test in which individuals are asked to make judgements about concepts. For example: "Which of the following objects best satisfies the criteria, hard and round: an iron, a button, a tennis ball or a lightbulb? On the other hand, divergent production of semantic units (DMU) would require the person to list all items they can think of that are round and hard in a given time period. Divergent production of symbolic units (DSU) involves a different content category than DMU, namely words (e.g., "List all words that end in 'tion'"). Divergent production of semantic relations (DMR) would involve the generation of ideas based upon relationships. An example test item for this ability would be providing the missing word for the sentence: "The fog is as ____ as sponge" (e.g., heavy, damp, full).

**Principles:**

1. Reasoning and problem-solving skills (convergent and divergent operations) can be subdivided into 30 distinct abilities (6 products × 5 contents).

2. Memory operations can be subdivided into 30 different skills (6 products × 5 contents).

3. Decision-making skills (evaluation operations) can be subdivided into 30 distinct abilities (6 products × 5 contents).

4. Language-related skills (cognitive operations) can be subdivided into 30 distinct abilities (6 products × 5 contents).

**Challenges**

Psychologist Linda Gottfredson (Gottfredson, 2003) criticises the unempirical nature of triarchic theory and argues that it is absurd to assert that traditional Intelligence tests are not measuring practical intelligence when they show a moderate correlation with income, especially at middle age when individuals have had a chance to reach their maximum career potential, an even higher
correlation with occupational prestige, and that IQ tests even predict the ability to stay out of jail and stay alive (all of which qualifies as practical intelligence or "street smarts").

Gottfredson claims that what Sternberg calls practical intelligence is not a broad aspect of cognition at all but simply a specific set of skills people learn to cope with a specific environment (task specific knowledge).

As for the creative component of Sternberg's model, a Harvard study questions whether it's meaningful to treat creativity as a cognitive ability separate from analytical intelligence, but instead finds that creativity is simply the product of a high intelligence score combined with a low level of latent inhibition—when high intelligence levels are not present, low levels of latent inhibition put one especially at risk for schizophrenia.

**Emotional intelligence**

Daniel Goleman and several other researchers have developed the concept of emotional intelligence and claim it is at least as "important" as more traditional sorts of intelligence. These theories grew from observations of human development and of brain injury victims who demonstrate an acute loss of a particular cognitive function—e.g. the ability to think numerically, or the ability to understand written language—without showing any loss in other cognitive areas.

**PASS Theory**

PASS theory has been offered as an alternative to general intelligence, and is based on a description of neuropsychological processes. These authors suggested that a unidimensional model with just intelligence fails to assist researchers and clinicians who study learning disabilities, disorders of attention, mental retardation, and interventions designed for special populations who face those challenges. The PASS model covers four kinds of competencies that are associated with areas of the brain. (1) The planning processes involve decision making, problem solving, and performing activities and requires goal setting and self-monitoring. (2) The attention/arousal component involves selectively attending to a particular stimulus, ignoring distractions, and maintaining vigilance. (3) Simultaneous processing involves
the integration of stimuli into a group and requires the observation of relationships. (4) Successive processing involves the integration of stimuli into serial order. The planning and attention/arousal components come from structures located in the frontal lobe, and the simultaneous and successive processes come from structures located in the posterior region of the cortex.

**Empirical evidence**

IQ proponents have pointed out that IQ's predictive validity has been repeatedly demonstrated, for example in predicting important non-academic outcomes such as job performance (see IQ), whereas the various multiple intelligence theories have little or no such support. Meanwhile, the relevance and even the existence of multiple intelligences have not been borne out when actually tested. A set of ability tests that do not correlate together would support the claim that multiple intelligences are independent of each other.

**Evolution of intelligence**

Our hominid and human ancestors evolved large and complex brains exhibiting an ever-increasing intelligence through a long and mostly unknown evolutionary process. This process was either driven by the direct adaptive benefits of intelligence or – alternatively – driven by its indirect benefits within the context of sexual selection as a reliable signal of genetic resistance against pathogens.

**Factors affecting intelligence**

Intelligence is an ill-defined, difficult to quantify concept. Accordingly, the IQ tests used to measure intelligence provide only approximations of the posited 'real' intelligence. In addition, a number of theoretically unrelated properties are known to correlate with IQ such as race, gender and height but since correlation does not imply causation the true relationship between these factors is uncertain. Factors affecting IQ may be divided into biological and environmental.
**Biological**

Evidence suggests that genetic variation has a significant impact on IQ, accounting for three fourths in adults. Despite the high heritability of IQ, few genes have been found to have a substantial effect on IQ, suggesting that IQ is the product of interaction between multiple genes.

Other biological factors correlating with IQ include ratio of brain weight to body weight and the volume and location of gray matter tissue in the brain.

Because intelligence appears to be at least partly dependent on brain structure and the genes shaping brain development, it has been proposed that genetic engineering could be used to enhance the intelligence of animals, a process sometimes called biological uplift in science fiction. Experiments on mice have demonstrated superior ability in learning and memory in various behavioural tasks.

**Environmental**

Evidence suggests that family environmental factors may have an effect upon childhood IQ, accounting for up to a quarter of the variance. On the other hand, by late adolescence this correlation disappears, such that adoptive siblings are no more similar in IQ than strangers. Moreover, adoption studies indicate that, by adulthood, adoptive siblings are no more similar in IQ than strangers, while twins and full siblings show an IQ correlation.

Consequently, in the context of the nature versus nurture debate, the "nature" component appears to be much more important than the "nurture" component in explaining IQ variance in the general population.

There are indications that, in middle age, intelligence is influenced by life style choices (e.g., long working hours).

Cultural factors also play a role in intelligence. For example, on a sorting task to measure intelligence, Westerners tend to take a taxonomic approach while the Kpelle people take a more functional approach. For example, instead of grouping food and tools into separate categories, a Kpelle participant stated "the knife goes with the orange because it cuts it"
Ethical issues

Since intelligence is susceptible to modification through the manipulation of environment, the ability to influence intelligence raises ethical issues. Transhumanist theorists study the possibilities and consequences of developing and using techniques to enhance human abilities and aptitudes, and ameliorate what it regards as undesirable and unnecessary aspects of the human condition; eugenics is a social philosophy which advocates the improvement of human hereditary traits through various forms of intervention. The perception of eugenics has varied throughout history, from a social responsibility required of society, to an immoral, racist stance.

Neuroethics considers the ethical, legal and social implications of neuroscience, and deals with issues such as difference between treating a human neurological disease and enhancing the human brain, and how wealth impacts access to neurotechnology. Neuroethical issues interact with the ethics of human genetic engineering.

Other species

Although humans have been the primary focus of intelligence researchers, scientists have also attempted to investigate animal intelligence, or more broadly, animal cognition. These researchers are interested in studying both mental ability in a particular species, and comparing abilities between species. They study various measures of problem solving, as well as mathematical and language abilities. Some challenges in this area are defining intelligence so that it means the same thing across species (eg. comparing intelligence between literate humans and illiterate animals), and then operationalizing a measure that accurately compares mental ability across different species and contexts.

Artificial intelligence

Artificial intelligence (or AI) is both the intelligence of machines and the branch of computer science which aims to create it, through "the study and design of intelligent agents" or "rational agents", where an intelligent agent is a system that perceives its environment and takes actions which maximize its chances of success. General intelligence or strong AI has not yet been achieved and is a long-term goal of AI research.